RY

h

The state of the s

ed of IONS alifyaftereenth Paper

d the L BE affair ce ou

TH H. EET,

> SEMEN STATES



CAUSTIC SODA · ALUMINUM
SULPHATE (PAPER MAKER'S
ALUM, NATRONA POROUS
ALUM, IRON-FREE ALUM) ·
PERCHLORON · PENCHLOR
ACID-PROOF CEMENT
SODA ASH · SODIUM
ALUMINATE · AMMONIA
(ANHYDROUS AND AQUA) ·
BLEACHING POWDER

With ample facilities to take care of any demands, Pennsylvania Salt Manufacturing Company has taken the opportunity to provide extra convenience for customers. We have adopted a shipping procedure that minimizes delays, assuring the speedy delivery of liquid chlorine in any quantity.

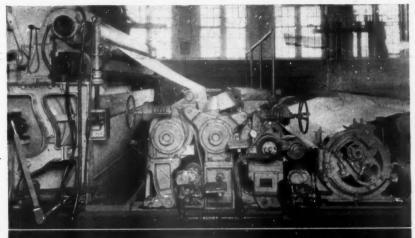
You will save both time and expense with chlorine supplied by this Company, for it reduces dispensing irregularities. Whether you use it for first stage chlorination in multistage bleaching, for hypochlorite bleach liquor, slime control, or water treatment, this pure product offers you definite advantages.

Our technical staff will gladly cooperate with the management of any mill in developing efficient and economical methods of using liquid chlorine.

PENNSYLVANIA SALT MFG. CO. OF WASHINGTON
TACOMA, WASHINGTON



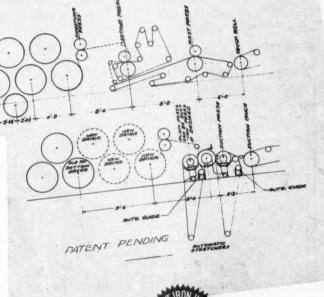
Better Different N E W



BELOIT HORIZONTAL

PAT. APPLIED FOR

DUAL PRESS





THE BELOIT WAY
IS THE MODERN WAY

SOME ADVANTAGES

- 1 Easily applied to existing machines.
- 2 Reduces maintenance.
- 3 Water falls AWAY from nip. More efficient than conventional press.
- 4 More convenient to operator.
- No chance for break press section has run several weeks with no breaks.
- Assures longer felt life—no reverse bends
 —practically no tension on felts.
- 7 Shorter felt length without decreasing felt life.
- 8 Reduces stretch in sheet.
- 9 Unnecessary to carry a large amount of crown.
- 10 Paper goes to dryers more bone dry.
- 11 Saves enough space to permit use of more dryers, or to lengthen fourdrinier wire part.
- 12 Eliminates crushes.

\$5.00

- 13 Smooths out sheet without need of reverse press.
- 14 Increases speed and safety.

Many other advantages. Write for details.

BELOIT IRON WORKS . BELOIT, WISCONSIN



General Aniline Works, Inc. Albany Division



General Aniline Works, Inc.
Linden Division

S O L A R C O L O R S

We now offer

new types of instantly dispersed

Solar Colors

which develop rapidly.

FOR PARTICULARS APPLY TO



GENERAL DYESTUFF CORPORATION

435 HUDSON STREET, NEW YORK, N. Y.

Boston, Mass., 159 High Street Philadelphia, Pa., 111 Arch Street Chicago, III., 731 Plymouth Court Providence, R. I., £5 Tockwotton Street Charlotte, N. C., 1101 South Boulevard San Francisco, Cal., 37 Clementina Street

Sole Agents for GENERAL ANILINE WORKS, INC.

"BIIND" for the donkey game-

BUT it's mighty expensive to be "blind" and guess about the weight on your Calender Roll. Use the new Taylor Calender Roll Pressure Indicator and BE SURE.

Guess about pressure at your Calender Rolls, and you get the evils of "blind" adjustments. Extreme variations in pressure that affect sheet uniformity... cause higher power consumption than necessary ... and shorten life of intermediate cotton or fibre rolls when used.

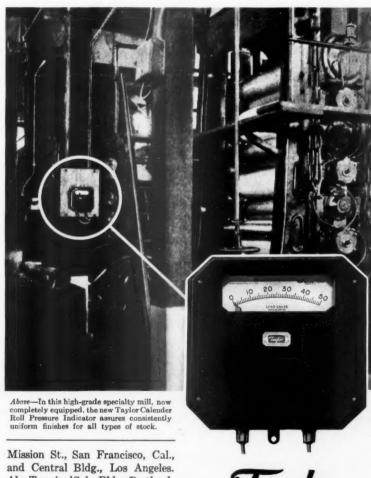
End guesswork and use the new Taylor Calender Roll Pressure Indicator. Results:

- Accurate measurement and indication of pressure on both ends of the roll.
- 2. A uniform nip pressure across entire width of the sheet.
- A uniform finish—and use of exact roll pressure for any given finish at any time.
- 4. Lower power costs.
- 5. Longer life for intermediate rolls.

This Taylor Roll Pressure Indicator measures in pounds the actual load exerted on the top roll bearing by the weight and screw arrangement. Tubing attached to each end of the roll transfers this reading to an open-face indicator. The combined length of the tubing for both systems is only 50 feet. It permits the instrument to be conveniently located for observation when making adjustments. A 5-inch open scale with bold figures and graduations, and two pointers in contrasting colors, enable the operator to make accurate observations from a distance.

For complete information ask a Taylor Representative, or write today to Taylor Instrument Companies, Rochester, N. Y. Plant also in Toronto, Canada.

Pacific Coast Sales Offices-145



Mission St., San Francisco, Cal., and Central Bldg., Los Angeles. Also Terminal Sales Bldg., Portland, Oregon. Complete repair facilities for all Taylor Instruments are available in San Francisco. For your own protection, let adjustments or repairs to your Taylor instruments be made by Taylor.

Taylor

TEMPERATURE, PRESSURE and

500,000 Hals

Through the use of tremendous power, radio station WLW is known far and wide.

Another "500,000 watt" organization is that of Black-Clawson and Shartle.

Among their recent major contributions to paper making are supercylinder machines, Tugboat Annies, Barnacle Bills, and rotobeaters.

BLACK-CLAWSON and SHARTLE BROS.





TRONA ON SEARLES LAKE, CALIFORNIA

Standards of Quality for the Paper Industry

TRONA SALT CAKE TRONA SODA ASH-

Trona Service

American Potash & Chemical Corporation

Western Office: 609 So. Grand Ave., Los Angeles Eastern Office: 70 Pine Street, New York

Manufacturers of "TRONA BRAND" Muriate of Potash and "Three Elephant" Borax



Superior Chemicals

ROSIN SIZE (Paste)

ROSIN SIZE (Dry) WAX SIZE PARAFFIN EMULSIONS SIZING VARNISH and other SPECIAL SIZING and WATERPROOFING MATERIALS ROSIN (Gum and Wood) SATIN WHITE CALCIUM ALUMINATE SODIUM ALUMINATE CASEIN CASEIN SOLVENTS SULPHONATED OILS SULPHONATED TALLOWS ALUMINUM SULPHATE (Alum) IRON FREE ALUM SILICATE OF SODA PAPER FILLERS FOAM KILLERS ANTI-FROTH OIL STEAM-DISTILLED PINE OIL COTTON PULP PAPER-COATING NITROCELLULOSE LACQUERS LACQUER EMULSIONS SOAP POWDERS OIL SOAPS FELT CLEANERS CLEANERS and DETERGENTS ACIDS ALKALIES CAUSTIC SODA SODA ASH BORAX TRI-SODIUM PHOSPHATE

FORMALDEHYDE TORNALAC BLANC FIXE ULTRAMARINE BLUES

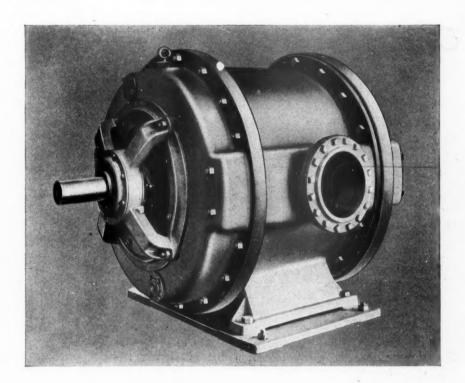
Plants and Offices

STONEHAM, MASS. HOLYOKE, MASS. PROVIDENCE, R. I. ALBANY, N. Y. CARTHAGE, N. Y. LOCKPORT, N. Y. EASTON, PA. WILMINGTON, DEL. ATLANTA, GA. SAVANNAH, GA. IACKSONVILLE. FLA. PENSACOLA, FLA. MARRERO, LA. KALAMAZOO, MICH. MILWAUKEE, WIS. CHICAGO, ILLINOIS PORTLAND, ORE. SAN FRANCISCO, CAL. FREEMAN, ONT. ERITH, ENGLAND

HERCULES POWDER COMPANY

Paper Makers Chemical Division Kalamazoo, Michigan

NASH VACUUM PUMPS



THE PAPER MILL STANDARD

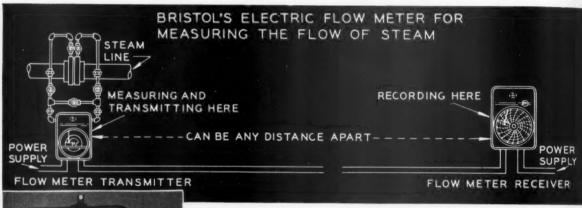
Nash Cone type Vacuum Pumps set the Paper Mill standard for performance, range and economy. More compact in structure, and requiring less horse power, these pumps offer higher vacuums and permit greater machine speeds. They may be direct connected to induction motors in capacities up to 600 cubic feet, and to synchronous motors up to 5000 cubic feet. Simple, efficient and economical. One moving part, rotating on high grade ball bearings, without internal metallic contact. No gears.

THE NASH ENGINEERING COMPANY SOUTH NORWALK, CONNECTICUT, U. S. A.

Now...a new

ELECTRIC FLOW METER

offering a SIMPLE, LOW-COST method for measuring and integrating steam flow





Transmitter, located at point where flow of steam or other fluid is to be measured.

Recording Receiver, in your office or other central headquarters. Models for indicating, recording and integrating flow.



WHAT is the steam consumption of each department in your plant? What for each machine? Do you know?

To guess is costly. By means of this new Bristol's Electric Flow Meter, it is possible for you to keep a continual check over consumption. You can figure and allocate your costs correctly; and, what is equally important, you can detect waste, leakage and loss before it amounts to alarming totals.

Write for New Catalog No. 105-OH now being printed.

FEATURES AT A GLANCE!

- 1. Offered for measuring steam, water, air, gases and solutions.
- 2. Accuracy not influenced by circuit characteristics.
- Simple two-wire circuit between transmitter and recording receiver. Telephone circuits may be used.
- 4. Measurements transmitted any distance up to several hundred miles.
- 5. New electrical integrating mechanism assures extreme accuracy.
- 6. Special chart integrator also available.
- Conveniently totalizes flow at periphery of chart.
- 7. Uniform chart scale.
- Moisture-, fume- and dust-proof case for transmitter and recording receiver.
- Electric contact enclosed in glass.
 Models for indicating, recording, and integrating.
- 11. For installation on panel, wall, pole or for flush mounting.
- 12. Several receivers may be connected to one transmitter.

THE BRISTOL COMPANY • WATERBURY • CONN.
Branch Offices: Rialto Building, San Francisco; 747 Warehouse St., Los Angeles; White Building, Seattle. West Coust Service Laboratory and Branch Factory: 311 Minna St., San Francisco.

BRISTOL'S

PIONEERS IN PROCESS CONTROL SINCE 1889

Y

our

low

on-

ind,

loss

t pe-

f case

iss.

g, and

pole

ected

NN.

Build-

ncisco.

889



THE HOME OF ALBANY FELTS

Felts For: Leather Board Straw Board Box Board Bristol Board Tissue Bond Writings Insulation Board Mulch Paper Straw Paper Wrappings Glassine Newsprint Cellucotton Wall Board Soda Pulp Sulphite Pulp Building Papers Asbestos Papers Cement Shingles Blotting Book Chip Board News Board Cover Kraft Ledger Manila Rope Ground Wood Pulp Binders Board Toweling Condenser Paper Bottle Cap Board Catalogue Envelope Container Board Hanging Coating Boards Coating Papers Tag Board

SPECIALIZATION

Ours is a specialized business—that of making good paper machine felts. It is different from any other textile business in the world.

Our designers, spinners, weavers, research chemists, finishers, are all specialists with years of sound experience in felt making. Some of them have followed their particular line of work for 25 years.

Machinery, too, is special. Much of it is of our own design.

Our resources and world-wide experience have led the paper industry to bring all manner of problems to us involving the use of felts.

If you have an unusual machine condition which is bothering you, let us know about it. Perhaps we can help you.

ALBANY FELT COMPANY

ALBANY, NEW YORK

NON-USERS ARE THE LOSERS"

FINISH AND SPEED

OUTPUT THAT STAYS PUT

MORE and more production required every day.... Bigger shipments of perfect paper, and no rejects.... Many a technical engineer or superintendent who has scored an emphatic YES for TENAX FELTS for Tenacity and Durability and Finish and Trim — now thankfully adds SPEED to this make-good list.

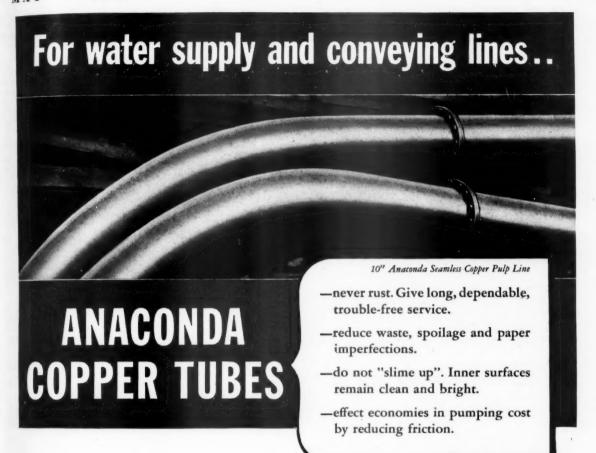
TENAX FELTS have been giving this satisfactory service for 45 years; adding constantly to prestige and reputation.

"Non-Users
Are the Losers"

LOCKPORT FELT COMPANY

Newfane, N.Y. • U.S.A.

Pacific Coast Representative: ALAN C. DUNHAM, Portland, Ore.



BECAUSE Anaconda Copper Tubes in both large and small diameters are assembled without threading, they do not require heavy walls. This means less weight per foot; gives you the permanence of copper at lower cost.

Hard drawn Anaconda Copper Tubes are furnished in straight lengths up to 20 feet. Soft tubes are available in 30, 45 and 60-foot coils in sizes up to 1¼". Small size tubes in long lengths require fewer fittings—can be bent cold around ordinary obstructions. Assembled with Anaconda Solder-Type or Flared Tube Fittings they make ideal distribution lines to sprays, showers, vats and machines.

Years of service in paper mills prove that Anaconda Copper Tubes save money—eliminate paper imperfections by eliminating rust and scale. Publication C-33 on request.

OTHER ANACONDA PRODUCTS FOR THE PAPER INDUSTRY

Anaconda "67" and "85" Brass Pipe

Seamless Brass Tubes for Fourdrinier table rolls, etc.

Phosphor Bronze for screen plates, Jordan fillings, etc.

EVERDUR Metal—non-rusting for bolts, screws, electrical conduit, tanks, vats, "save all" pans, etc.

Engineering Service—A request for service entails no obligation.

Anaconda Copper Tubes

THE AMERICAN BRASS COMPANY • General Offices: Waterbury, Connecticut Offices and Agencies in Principal Cities . . . In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

Creosoted Douglas Fir

California Redwood



Untreated Douglas Fir

Western Red Cedar

Manufacturers of

TANKS
WOOD
WOOD
PIPE



WOOD



KENTON STATION



PORTLAND, OREGON

Division of M AND M WOODWORKING CO



CAUSTIC SODA LIQUID CHLORINE FOR THE NORTHWEST

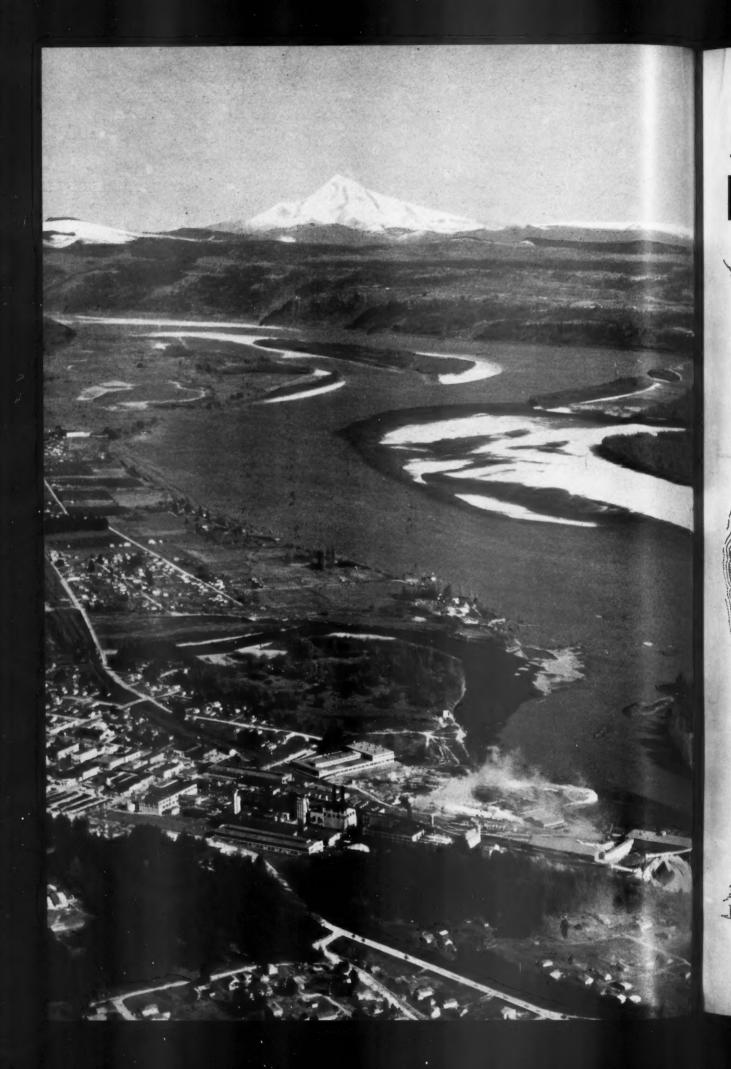
Appreciating the diversified uses of Caustic Soda and Liquid Chlorine, the Hooker Company offers the technical services of an experienced engineering staff. Mills in the east and south as well as the west have used Hooker service to help solve their operating problems. At Tacoma, Washington, are maintained plant, laboratories, field staff and administrative personnel to serve west coast industries.

WESTERN PLANT, Tacoma, Washington
Western Sales Office, Tacoma, Washington

EASTERN PLANT, Niagara Falls, N. Y.
Eastern Sales Office, 60 East 42nd St., New York

HOOKER ELECTROCHEMICAL COMPANY

MURIATIC ACID BLEACHING POWDER MONOCHLORBENZENE PARADICHLORBENZENE
BENZOATE OF SODA BENZOIC ACID BENZOYL CHLORIDE BENZYL ALCOHOL
SULFUR MONOCHLORIDE SULFUR DICHLORIDE SULFURYL CHLORIDE SALT
FERRIC CHLORIDE ANTIMONY CHLORIDE



Pacific PULP& PAPER Industry

The Journal of the Pacific Coast Industry



Annual Review and Statistical Number

MAY • 1937

Vol. XI - No. 5

MILLER FREEMAN, President
L. K. SMITH, Manager
HARLAN SCOTT, Editor
JOHN E. BROWN, Associate Editor
KEMPER FREEMAN, Production Manager
MILLER FREEMAN, Jr., Circulation Manager

Seattle—(Publishing Office) 71 Columbia Street. Tel. MAin 1626 Portland—(John E. Brown) 1220 S. W. Morrison St. Tel. AT. 8890 San Francisco—(Sam M. Hawkins) 121 Second St. Tel. GA. 5887 Los Angeles—(Calvin D. Wood) 124 W. Fourth St. Tel. Mutual 5857

Published by the Consolidated Publishing Co., in Seattle, U.S. A., on the 15th of each month

SUBSCRIPTION RATES

United States and Canada	\$4.00
Other Countries	\$5.00
Single Copies	\$.35
Review Number	\$1.00

Copyright, 1937, by the Consolidated Publishing Company



On the left > > > Mount Hood, forty miles away on the Oregon side of the Columbia River looks down upon the busy Camas, Washington, pulp and paper mill of the Crown Willamette Paper Company, Division of Crown Zellerbach Corporation.

Table of Contents Appears on the Last Page

SELLING AGENTS

for WOOD PULP and PAPER



BULKLEY DUNTON PULP CO., Inc.

295 MADISON AVENUE NEW YORK, N. Y.

CABLE ADDRESS: BULKTON

Pacific Coast Industry Experiences a Good Year

New Production Records Set in 1936 – First Half of 1937 Shows Further Improvement – Optimism Tempered by Caution

PRODUCERS of pulp, paper, board and miscellaneous paper products on the Pacific Coast for the most part moved their figures well over onto the black side of the ledger in 1936. It was not a boom year, not even a normal year in many ways, if 1926 is taken as the normal for both prices and profits, but it was generally more satisfactory than any year since 1930.

Operating schedules were closer to capacity for both pulp and paper mills. Pulp and board production gradually speeded up during the year to capacity but paper production moved ahead more slowly.

Exceptional activity in the making of improvements and in the adding of capacity marked 1936 on the Pacific Coast. Developments in machinery and processes were put into daily operation causing the expenditure of large sums for capital investment. Plans for improvements made since 1931 were in many cases not put into execution until 1936 and the early part of 1937.

A large reservoir of ideas and plans had been built up by the operating and engineering departments, but held back since the early days of the depression either because of the lack of money or for the reason that the outlook did not appear to justify the expenditures necessary to install these improvements.

But the dam broke in 1936 letting loose a pent up demand for equipment which swamped a number of suppliers. More equipment was manufactured on the Pacific Coast than in previous years partly because of the hurry with which the mills acted and partly because Pacific Coast equipment manufacturers had perfected their products and were in a strong competitive position against producers of similar products in other sections of the country.

More Pulp Tonnage Added Than In 1927

Although but one new mill began production in the year beginning July lst, 1936, the unbleached sulphite pulp mill of the Pulp Division Weyerhaeuser Timber Company at Everett, Washington, the total daily productive pulp capacity of the Pacific Coast industry increased more than in any previous year of the past ten.

recreased more than in any previous year of the past ten.

The year 1927 has been considered as having brought forth more new Pacific Coast tonnage, with 1010 tons additional daily pulp capacity, than any other yearly period. Three new pulp and paper mills began production in that year.

U. S. Pacific Coast Wood Pulp Production, 1923-1936

	Tons	of	2,000	11
1923	***************************************	29	9,596	
1924	***	30	9,433	
1925	********************	32	2,594	
1926	******************************	37	8,005	
1927	*****************************	44	9,218	
1928	***************************************	56	2,514	
1929	*************	78	0,494	
1930	***********	81	5,089	
1931	***************************************	81	7,548	
1932		60	7,662	
1933	**	77	3,102	
1934	********************************	93	5,033	
1935		,01	1,421	
1936	1	,17	1,452	

British Columbia Wood Pulp Production, 1923-1936

	Tons of 2,000 l
1923	217,076
1924	216,243
1925	230,733
1926	259,504
1927	296,253
1928	310,961
1929	304,619
1930	335,429
1931	310,029
1932	259,586
1933	343,897
1934	383,818
1935	361,800
1936	392,400

However, 1936 witnessed the addition of 1,163 tons to the daily capacities of Pacific Coast pulp mills, which exceeded the record year 1927 by 153 tons. For the most part this expansion was in relatively small tonnages, being spread out among a large number of plants. This addition of pulp capacity is given in table form.

In 1928, 890 tons were added to the pulp capacity of Coast mills; in 1929, 480 tons were added; and, in 1930, 350 tons were added.

During the 12 months from July 1936 to July 1937 the expansion of paper grade bleached sulphite pulp capacity amounted to 66.4% over 1935. Rayon grade bleached sulphite pulp capacity expanded 41%.

Unbleached sulphite pulp capacity declined 5% due to shifts from unbleached to bleached sulphite, and despite the starting of the new Weyerhaeuser unbleached sulphite pulp mill at Everett, Washington. Increases in unbleached sulphite production were also

made at Pacific Mills, Limited, Crown Willamette Paper Company Division of Crown Zellerbach Corporation at Camas, Washington, and at the Fibraboard Products, Incorporated mill at Port Angeles, Washington.

Unbleached sulphate pulp production rose 54.7% in 1936-1937 over the previous year, due principally to the resumption of operations by the St. Regis Kraft Company at Tacoma, Washington and the Vancouver Kraft Mills, Limited at Port Mellon, B. C.

Bleached kraft production is not measurable as varying tonnages are bleached and semi-bleached. The St. Regis Kraft bleach plant is capable of bleaching the entire mill output of 180 tons per day if desired.

Prices

Wood pulp prices lagged behind other commodities after the rapid rise in 1933. At the close of 1933 domestic bleached sulphite pulp hit a temporary high of \$60 per ton ex dock Atlantic ports, dropping back at the beginning of 1934 to \$55. This price was officially the price during 1934 but concessions were reported to have been made frequently. The weakness of unbleached sulphite demand undermining the stronger market position of bleached sulphite. The \$55 price for bleached lasted through the first quarter of 1935 when it went down to \$50 upon the decision of foreign producers. Unbleached sulphite, which had reached a price of \$41 and \$42 by the end of 1933 remained on that level through 1934 and until the cut in bleached prices in March 1935, when it, too, sagged, going down to \$40 and then \$38. Demand for unbleached was weak and it was generally feared the spread between the two grades was unsound.

At the end of the first quarter of 1936 foreign bleached started to rise, going again to \$55. Domestic bleached, which had risen to \$52 shortly after the first of the year 1936 dropped back to \$50 almost immediately, rising again to \$52 at the middle of the year and remaining on that level until January 1937. In the third and fourth quarters of 1936 foreign bleached started to climb ending at \$65 on January 1st, 1937.

Unbleached sulphite remained weak through the first three quarters of 1936 but rapidly gained strength in the fourth quarter, ending the year at \$47.50 for foreign unbleached. The slack in the unbleached market was at last beins taken up. The first of this year domestic producers raised bleached sulphite to \$54 and for the second quarter raised the price to \$58. At this time domestic unbleached was raised to \$46.

Unbleached kraft pulp, which had hit a low in 1933 of \$25 for foreign pulp, rose to \$35 by the end of that year. In 1934 foreign kraft bounced up and down between \$35 and \$37.50 going down in 1935 to \$33 and \$34, but rising to \$36 at the end of that year. Kraft rose steadily during 1936 to around \$50 at the end of the year. The rapid development of the kraft industry in the Southern states most of

The rapid development of the kraft industry in the Southern states most of which will come into production late this year and in 1938, only temporarily depressed the kraft pulp market. The Swedish producers, fearful of the effect of this more than two million tons of new kraft production (more than all imported in 1926) lowered their prices for 1938 delivery to around \$38 per ton, but in the second quarter of 1937, with the consumption of kraft growing, regained confidence and began raising their quotations for 1938.

The prices given above are contract prices. Since the early part of the fourth quarter of 1936 when unbleached sulphite began to show strength these contract prices ceased to picture the true state of the pulp market.

Toward the end of the year buyers of pulp found themselves with business requiring more pulp than they had con-

tracted for. Demand for spot deliveries of both small and large lots of pulp appeared and developed rapidly.

Shortly after the first of this year it became apparent that a shortage of all grades of pulp was an actuality and not the talk of sellers. Buying mills, who had taken their sources for granzed and hesitated to make commitments found themselves unprotected. A scramble has resulted running the price of spot delivery pulp up to phenomenal figures.

As this is written, the middle of May, 1937, the Eastern United States spot market is quoted as being from \$69 to \$72.50 for first quality unbleached sulphite; from \$90 to \$100 for first quality bleached sulphite and around \$80 for prime kraft. Many observers predict \$90 or \$100 bleached sulphite as the contract basis for the first quarter of 1938 with the other grades priced proportionately.

It must not be overlooked that costs are rising rapidly along with the demand for pulp. From the raw wood on through to delivery to the consumer the cost of materials and services have all risen steadily.

Brokers in New York term the present situation as a "runaway market." Producers are divided in their opinions. Eastern Canadian and American manufacturers of pulp for market are said to be willing to take advantage of the rising prices as are the Europeans. On the other hand Pacific Coast producers are generally bearish, believing that the spot market is temporary and supported by too thin a margin of excess demand to be sound or to warrant such high prices for pulp as are being paid today for spot deliveries. Several Pacific Coast producers have been trying to hold prices at what they consider reasonable limits. In their minds the memory of 1931 and 1932 bankrupting markets is too fresh to make a runaway market seem attractive. They feel that what goes up must come down and hence a slower rise with adequate support is not so likely to bring a recession later on with the resulting necessity for cost reduction in their mills.

This journel is simply reporting the several attitudes toward the pulp market situation as it exists today. It is attempting to record the pulp industry's condition and its prospects as they are viewed by those who are in the production and selling of wood pulp on the market.

13

12

11

10

6

5

While the basic law of supply and demand has not been repealed and will continue to operate despite man-made conditions, the speculation among pulp producers centers in the factors which today make up the demand for wood pulp. One group thinks the industry is in danger of being overbuilt by reason of the present excess of demand

PACIFIC COAST WOOD PULP PRODUCTION-1923-1936

Pacific Coast States and British Columbia (Tons of 2,000 lbs.)

	1923	1924	1925	1926	1927	1928	1929
	Tons	1 ons	Tons	Tons	Tons	Tons	Tons
Washingon	136,943	159,539	161,858	199,164	268,349	349,107	523,94
Oregon and California	162,653	149,894	160,736	178,841	200,869	213,407	256,54
British Columbia	217,076	216,243	230,733	259,504	296,253	310,961	304,61
Total Pacific Coast	516,672	525,676	553,327	637,509	775,471	873,475	1,085,113
	1930	1931	1932	1933	1934	1935‡	1936‡
	Tons	Tons	Tons	Tons	Tons	Tons	Tons
Washington Oregon and California British Columbia	566,137	580,016	420,529	583,770	709,748	743,223	859,210
	248,952	237,532	187,133	189,332	225,285	283,198	312,24
	335,429	310,029	259,586	343,897	383,818	361,800	392,400
Total Pacific Coast	1,150,518	1,127,577	867,248	1,117,999	1,318,851	1,388,221	1,563,85

Source--U. S. figures up to and including 1933, from U. S. Dept. of Commerce, Bureau of Census; B. C. figures from Dept. of Lands, Forest Branch; and Dominion Bureau of Statistics.

‡ Figures based upon United States Pulp Producers Association total for Oregon and Washington, excepting soda pulp. Addition of soda pulp production and division of products between Oregon and Washington estimated by Pacific Pulp & Paper Industry. No wood pulp production in California.

PULP WOOD CONSUMPTION-1923-1936

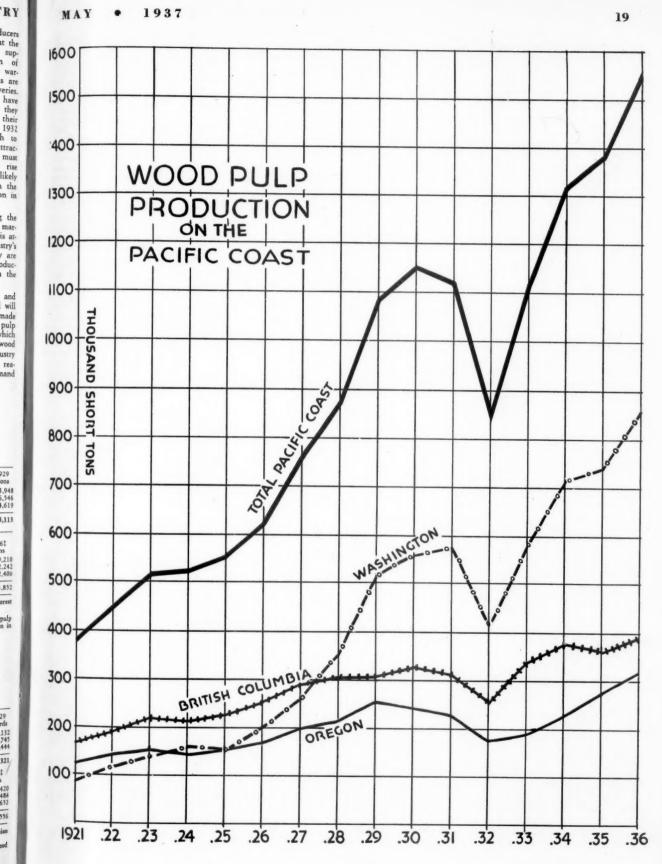
Pacific Coast States and British Columbia

	1923	1924	1925	1926	1927	1928	1929
	Cords	Cords	Cords	Cords	Cords	Cords	Cord
Washington	191,751	230,299	241,150	305,787	455,664	651,657	956.1
Oregon and California	205,199	205,968	209,349	232,989	267.233	308,264	340,7
British Columbia*	267,000	266,000	284,100	318,500	364,000	383,008	352,4
Total Pacific Coast	663,950	702,267	734,599	857,276	1,076,899	1,342,929	1,649,32
	1930	1931	1932	1933	1934	1935‡	1936\$
	Cords	Cords	Cords	Cords	Cords	Cords	Cords
Washington Oregon and California British Columbia*	1,000,001	1,025,878	688,326	1,094,852	1,334,000	1,412,124	1,718,4
	351,053	319,876	265,470	241,841	288,000	538,076	624,4
	373,397	363,688	304,185	375,450	428,287	402,000	482,6
Total Pacific Coast	1,724,451	1,709,442	1,257,981	1,712,143	2,050,287	2,352,200	2,825,5

Source—U. S. figures from U. S. Dept. of Commerce, Bureau of Census; B. C. Figures from Dept. of Lands, Forest Branch; and Dominies Bureau of Statistics.

*Biritish Columbia figures prior to 1928 are not shown separately and are estimated on basis of 1.23 cords of wood consumed per ton of wood pulp produced.

‡Estimated.



lucers it the sup-of war-s are eries.

have they their 1932 h to ttrac-

must rise likely the on in the the mar-is at-

stry's are oducand will made pulp which wood ustry

rea-nand

929 ons 3,948 5,546 4,619 5,113

6‡ ns 1,210 1,242 1,400 1,852 orest

321

ov market with the had a least of the least

modicione exceptione de la constanta de la con



Photograph by courtesy of E. I. duPont deNemours & Ca

The Du Pont cellulose sponge, one of the newer wonders of cellulose chemistry, is made of Pacific Coast bleached sulphite pulp » » It possesses a number of advantages including the ability to withstand sterilization by boiling » » The triangular slice in the center illustrates how the cellulose sponge can be cut to meet various household and industrial uses without damage to its texture or durability.

over supply and the resulting high spot over supply and the resulting high spot market prices. The opposing group takes the position that none can tell will continue to expand. They point to the newer outlets for wood pulp which have developed rapidly in the past

The new markets for wood pulp will e discussed in a separate article in this

Review Number.

Coast Pulp Production Up 14%

Production data compiled by the United States Pulp Producers Association shows the Pacific Coast wood pulp production, all grades, for 1936 to have been 1,156,452 tons, an increase of 14.4 been 1,176,472 tons, an increase of 19-7, per cent over the 1,011,421 tons produced in 1935, and an increase of 25.8 per cent over the 919,533 tons produced by this region in 1934.

Of this 1936 total of 1,156,452 tons was subplied Of this

668,316 tons was sulphite. Of this 371,730 tons were bleached sulphite and

296,586 tons were unbleached sulphite.
In 1936 the production of bleached and unbleached sulphite pulp combined exceeded the 1935 production of 560,726

tons by 19 per cent.

The production of bleached sulphite pulp on the Pacific Coast in 1936 exceeded the 1935 production of 313,203 by 18.6 per cent.

Coast unbleached sulphite pulp production in 1936 exceeded 1935 by 19.8

per cent.

Total sulphate production increased but 1.5 per cent in 1936 over the 1935 production of 194,740 tons. Bleached sulphate production reported by Pacific Coast mills dropped 50 per cent, from 27,324 tons in 1935 to 13,732 tons in

Unbleached sulphate production in-creased 9.9 per cent in 1936 over the 167,416 tons produced in 1935.

Groundwood production went up 5.6 per cent in 1936 over 1935 production of 255,955.

More Sulphite

Pacific Coast mills again produced more of the nation's sulphite pulp than did any of the other producing regions, exceeding by 219,892 tons its nearest regional competitor, New England. In 1935 the Pacific Coast led New England which is a constant of the pacific Coast led New England and the coast led Ne sulphite production by 186,387 tons, an increase in 1936 of 33,505 tons.

The Pacific Coast in 1936 produced

38 per cent of the sulphite pulp produced in the United States, compared

with 36 per cent in 1935.

Highlights of the Coast Industry

Improvement in processes, methods and equipment featured the pulp and paper industry on the Pacific Coast during 1936. Greater income provided the money needed for changes long con-

sidered.

The attention given to bettering wood reparation in 1935 was carried through 1936. Most of the wood preparation plants were improved, some were completely rebuilt and new methods in-stalled along with new equipment. The search for the perfect wood cleaning and preparing plant continues unabated despite the knowledge that it can never be fully attained. The strong desire of Pacific Coast mills to obtain the cleanest thips at the lowest cost stimulates the effort to approach perfection.

tion

Cooking systems again underwent re-vamping with many sulphite mills invamping with many sulphite mills in-stalling circulating systems in addition to the Chemipulp systems already oper-ating. Following the circulating sys-tems the trend toward chip packers be-gan and before the present year is out it is expected that all mills using cir-culating systems will also employ chip packers.

Washing and Screening Were Refined

The undercover bleaching controversy continued to rage with changes methods applied by most mills. Co was improved by diverse methods. Bleach plants were rebuilt, some to provide higher color if the market should war-rant it later on. New bleach plants contained new ideas. Kraft bleaching continued to draw attention with the continued to draw attention with the installation of a bleach plant by the Longview Fibre Company and one by the St. Regis Kraft Company. The latter plans to bleach to a high white. It

began operations in May 1937.

Drying of pulp came in for much discussion. The installation of two fan pulp dryers or Flakt Dryers by the St. Regis Kraft Company created an analysis of the dryers and the company created an analysis of the dryers are all the company created an analysis of the dryers are all the company created an analysis of the dryers are all the company created an analysis of the dryers are all the company created an analysis of the dryers are all the company created an analysis of the dryers are all the company created an analysis of the dryers are company created an analysis of the compan alysis of the drying systems in general

The use of instruments to control operations from the digester house through the paper machine expanded.

The Rainier Pulp & Paper Company opened a special department to handle opened a special department to handle the engineering and sales of its Raylig made from waste sulphite liquor and employed as a road binder. Success at-tended their efforts and as a result hundreds of miles of secondary roads in the Northwest have been made dustfree. Large shipments were made as far away as New Jersey.

The Associations

The Pacific Coast Section of the Technical Association of the Pulp and Paper Industry, commonly known as TAPPI, together with the Pacific Ccast Division of the American Pulp & Paper Will Superintendents Association, provided an extensive educational program for the men in the Pacific Coast industry.

TAPPI's dinner meeting programs were more successful and drew a larger attendance than in 1935. The benefits of hearing authoritative papers and of discussion were extended to a larger group of operators than in the past. The dinner meetings also achieved their aim of bringing out the younger mill men in larger numbers.

The subjects discussed at the Super-intendents and TAPPI meetings covered a wide range. An enumeration of the subjects covered is of interest and value. A complete list follows: Instantaneous

PULP TONNAGE ADDED TO PACIFIC COAST INDUSTRY 1936 - 1937*

Capacities Given in Tons Per Day

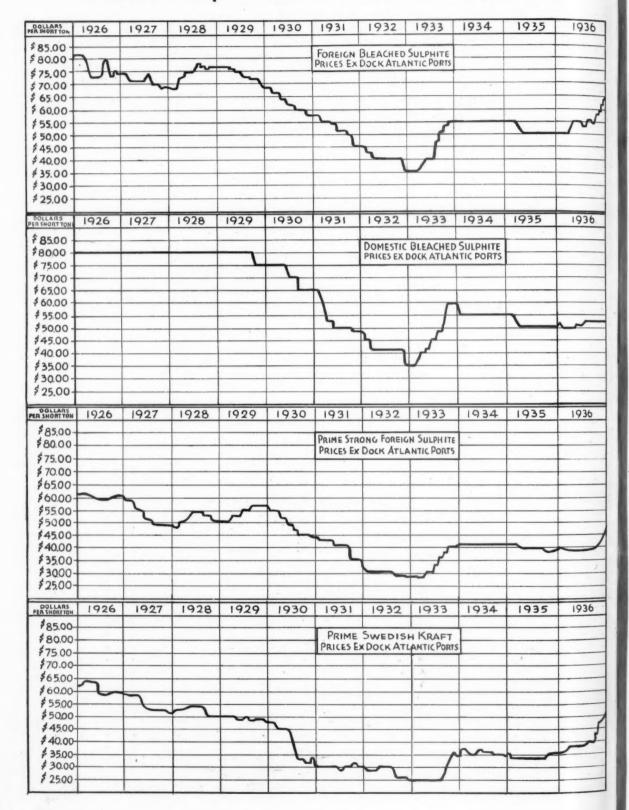
Name of Mill.	Location.	Unbleached Sulphite	Bleached Sulphite	Unbleached Sulphate	Soda
British Columbia					
B. C. Pulp & Paper Co., Ltd	Port Alice		20		
Pacific Mills, Limited				50	
Vancouver Kraft Mills, Ltd.1				80	
Washington				-	
Crown Willamette Paper Co	Camas	50		15	
Everett Pulp & Paper Co					10
Fibreboard Products, Inc.					***
Grays Harbor Pulp & Paper Co	. Hoguiam		50		
Longview Fibre Co.				40	
Olympic Forest Products Co	Port Angeles		50		
Soundview Pulp Co.			250		-
Shaffer Pulp Co.	Tacoma	60			
St. Regis Kraft Co.2				180	
Weyerhaeuser Timber Co.	Everett	230	****		
Weyerhaeuser Timber Co.3	Longview		30		
Oregon		1			
Oregon Pulp & Paper Co.	Salem		30		
,	Totals Total, all grades 1,163 tons.	358	430	365	10

^{*}Includes pulp capacities added during second half of 1936 and first half of 1937.

3 Added one digester for relief during relining.

¹ Resumed operation in January, 1937. ² Resumed operation in November, 1936.

Wood Pulp Price Trends-1926-1936



Determination of Moisture in Pulp, the Determination of Moisture in Pulp, the Moisture Register, Robert Stevens; Fair Process of Paper Filling by Walter Glass; Moving Pictures of Rayon Manufacture by Dr. Robert E. Brown; Slime in Pulp and Paper Mills by Paul Bovard; The Design and Use of Flat Screens. by Ray Smythe; Metals and Metal Alloys in the Pulp and Paper Industry, R. E. Chase.

Forest Research and the Pulp Industry in the Pacific Northwest, by J. Elton Lodewick; Pulpwood Preparation in the Pacific Northwest, by Clark Lewis.

Pacific Northwest, by Clark Lewis.
A Symposium on Bleaching which included Notes on Pulp Bleaching, by A.
H. Hooker, Jr.: The Hooker Continuous
Chlorination System, by Tom E. Moffitt; Pulp Bleaching, by Dr. W. Hirschkind; Experimental Studies on the Bleaching of West Coast Sulphate Pulps, by Brian L. Shera.

Simplified pH Measurement, by David Simplified pH Measurement, by David J. Pye; Electrical Maintenance in the Paper Mill, by C. V. Smith; Paper Mill Slime and Its Control, by George S. Douglas; Measurement of Gelatinization of Wood and Pulp by Water Reception under Pressure, by Joseph L. McCarthy and Edwin C. Jahn; Instrumentation in Pulp and Paper Mills, by Herbert T. Peterson.
Sulphur Dioxide Absorption Loses, by Dr. W. L. Beuschlein; Treatment of Boiler water in the Northwest, by Dr. Kenneth Kobe; Factors Governing the Selection and Design of Black Liquor

Selection and Design of Black Liquor

Units, by H. W. Beecher; Moving Pictures of Paper Machines, by R. T. Petrie; Titanium Pigments, Their Manufacture, Properties and Use in Paper Making, by William R. Willetts; Copper and Copper Alloy Metals, by James

and Copper Alloy Metals, by James T. Kemp.

The Corrosion of Metals, by F. L. LaQue; Moving picture by Du Pont, The Wonder Work of Chemistry; Laboratory Studies of Sulphite Waste Liquor, by Dr. H. K. Benson; A Rapid Method of Determining Curpammonium Viscosity of Pulp, by Elis A. Ennevaara; Dyestuff Problems in Paper Making, by H. A. Des Maris; The Effect of Clear Water on the Manufacture of Pulp and Paper. by Kenneth Shibley; Advancewater on the Manufacture of Pulp and Paper, by Kenneth Shibley; Advance-ment in Kraft Pulp Bleaching, by Brian Shera; The Horizontal Dual Press, by T. C. Roberts.

1936 Month by Month

JANUARY - Three pulp mill projects were talked about as being close to construction; the Prince Rupert project, the Thomas and the Meehan projects...none of which have as yet be-gun construction...Grays Harbor be-gan building a modern log breakdown and chipping plant... Inland Empire obtained a half million dollar loan from the Reconstruction Finance Corporation...Report on pulpwood resources of western Washington and western Oregon released by Pacific Northwest Forest Experiment. Station . . . Grays Harbor

Canadian-Japanese trade war settled.
...lasted for six months...said to have cost British Columbia \$5,000,000...
J. B. Martin was made manager of the new Fibreboard Products Division portland and Popher Burdy succeeded

in Portland and Robert Bundy succeeded him as manager of Fibreboard's Port Angeles pulp and board mill....

FEBRUARY-Announcement of Fry Roofing Company for Los Angeles to produce 15 tons of roofing per day...

James A. Ramsey, Everett Superintendent passed away...beloved by all who knew him....Reciprocal trade treaty dent passed away . . beloved by all who knew him . . . Reciprocal trade treaty with Canada announced binding pulp and news print on the free list . . . treaty praised and denounced....Rayon production for 1935 25 per cent above 1934 . . . greatest gain in any one year. ... Grays Harbor field notes... no region in United States will produce as large a volume of pulpwood per acre.... Royal Container moves into new San

Tappi's Pacific Section held a din-ner meeting in Portland on January 28th and another in Everett on February 4th...

Marathon waste sulphite liquor re-covery system attracts attention of world sulphite industry . . . begins operations in

UNITED STATES WOOD PULP PRODUCTION BY REGIONS'-1936

Source—United States Pulp Producers Association (Tons of 2000 Pounds)

Region.	Total All Grades*	Total Sulphite	Bleached Sulphite	Unbleached Sulphite	Total Sulphate	Bleached Sulphate	Unbleached Sulphate	Ground- wood
West Coast	1,156,452	668,316	371,730	296,586	197,743	13,732	184,011	270,395
New England	1,082,175	448,424	315,129	133,295	(1)	0	(1)	633,751
Middle Atlantic	695,295	224,684	126,930	97,754	149,155	0	149,155	321,456
Lake States	982,116	430,355	277,990	152,365	281,361	38,053	243,308	270,400
South	1,246,962	58,221	58,221		1,188,741	105,015	1,083,726	(2)
Totals	5,143	1,830,000	1,150,000	690,000	1,837,000	156,800	1,680,200	1,496,000

Production included in Middle Atlantic States total so as not to disclose individual mill's operations.
 Production included in Middle Atlantic States total for reason given above.

(3) Total of above grades only. Does not include soda pulp, damaged off-quality and miscellaneous grades of pulp. (About 15,000 tons of soda was produced on the Pacific Coast in 1936.—Editor).
Source: As reported to the United States Pulp Producers Association by 94 per cent of the industry and estimated for the remaing 6 per cent.

REGIONAL PERCENTAGES OF UNITED STATES WOOD PULP PRODUCTION Total and by Grades in 1934, 1935 and 1936

	_	Sulphi	ite —		Sulpha	te-	(iroundwo	ood—		- Total	
Region. 19	34	1935	1936	1934	1935	1936	1934	1935	1936	1934	1935	1936
New England 23	%	24%	23.3%	0%	1	1	42%	41%	42.5%	22%	21%1	21.5%
Middle Atlantic 12		13%	12.8%	0%	0%	4.5 %	18%	18%	21.5%	10%	10%	13.5%
Lake States 25	%	23%	23.3%	13%	17%1	19.25%			18.0%		20%	19.0%
South 4	%	4%	2.6%	731/2%	70%	66.25%	1%			25%	26%	24.5%
	%					10 %				23%	23%	22.0%
Total ³ 100	%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: As reported to the U. S. Pulp Producers Association by 94 per cent of the industry and estimated for the remaining 6 per cent.

Production included in Middle Atlantic States total so as not to disclose individual mill's operations.

² Same as above.

Total of above grades only. Does not include soda pulp, damaged, off-quality and miscellaneous grades of pulp.



Photograph by courtesy of E. I. duPont deNemours & G

Although "Cellophane" and other transparent cellulose films made from wood pulp have been marketed for a number of years new uses are found almost daily » » The doilies used in this table setting are of "Cellophane" slit cellulose film.

Y

January.... Tariff Commission investigators on Coast gathering data for pulp report the Tariff Commission is to make to Congress (the industry is still waiting for the report to be made)... Packer-Scott, paper jobbers of Portland, buy new building... Carter, Rice move to new jobbing headquarters in San Francisco.

MARCH—Coast hemlock and spruce annual growth per acre 2.1 times greater than Georgia pine, says David E. Hervey of the U. S. Forest Service.... Mr. Hervey was conservative, the ratio in favor of the Coast species is nearer 4 to 1... Rainier makes first experimental rayon filaments, February 26th, in new research laboratory at Shelton... first rayon spun west of Cleveland... purpose to provide tests for Rainier

pulp made for rayon mills...Rice straw ground at Richvale, California, offered at sale February 29th...apparent end of project to make paper from rice straw in Sacramento valley....Camas paper school completes third successful year...Zellerbach Paper Company builds new warehouse and office building in Los Angeles...

Columbia Paper Company of Vancouver, B. C. celebrates silver anniversary....

APRIL — Inland Empire reorganization completed... program of improvements launched by Lyman M. Smith, new general manager... Vancouver Kraft bondholders progressing with reorganization plans... L. P. Fortier comes from Michigan to be new superintendent for Everett Pulp and

Paper Company....J. D. Zellerbach elected trustee of Institute of Paper Chemistry....Longview Public Schools open vocational classes in pulp and paper survey course under direction of George, H. McGregor...New timber maps become available for western Washington and Oregon from the Pacific Northwest Forest Experiment Station in Portland....

MAY—St. Regis to open Tacoma pulp mill...announcement by parent company St. Regis Paper Company in New York that mill will be rebuilt, modernized, bleach plant installed... Roy K. Ferguson, president St. Regis, announces appointment of Ossian Anderson as executive vice-president of St. Regis Kraft Company... W. W. Griffith resident manager... Article describing Rainier Pulp & Paper Company's new research laboratory creates interest in foreign countries... one of finest research laboratories in the industry... Pacific States Paper Trade Association meets at Del Monte... 19th annual

Pacific States Paper Trade Association meets at Del Monte . . . 19th annual meeting . . merchants and manufacturers get together . . . Walter W. Heulat elected president for 1936-1937. . . .

JUNE—Soundview announces plans to increase production $60\% \dots 200$ tons per day capacity to be stepped up to 320, design providing for eventual 440 tons daily capacity. Inland Empire improvement program well under way...Pulp imports up 27% in first three months reports U. S. Department of Commerce...

Wage agreement signed between Coast unions and operators providing for increases and reclassifications of various types of work...effective May 31st... third agreement between Coast groups... agreement provides machinery for settling any disputes... no strikes, no lockouts.

Research in pulp industry problems continues along varied lines at University of Washington... outline of past, present and future work by Dr. Kenneth A. Kobe... Robert Scanlon resigns from Powell River Company to form paper brokerage company... Brown Paper Goods Company, Los Angeles converter making glasine bags and napkins expands from two to sixty employees in two years... Staffs of research men moved to new laboratory at Rainier mill in Shelton... Crown Willamette at Camas completes new dock and warehouse containing novel features at Camas....

BRITISH COLUMBIA

Review of Pulp and Paper Production 1919-1936

		Tons	-PAPE	K
Sulphite	Sulphate	Groundwd	News Print	Other
	*******	-	276,710	41,443
			262,123	33,287
130,176	15,630	209,359	267,406	26,777
122,265	15,715	185,451	237,107	23,492
85,419	10,889	161,502	205,050	24.051
124,521	11,744	170,432	217,562	17,709
130,462	13.055	172,539	224.928	20,446
112,925	15,647	151.066	201.009	19,492
	15.050	170,005	225.477	15,960
	13,700			13,745
108,381	15,000	136,123	176,924	10,389
92,514	16,856	121,363	148,201	9,261
89,839	14,403	112,001	136,281	9,653
99,878	9,932	107,266	142,928	7,709
86,894	9.674	100.759	124,639	7.945
68,502	6,519	89,725	110,176	6,934
92,299	16,380	108,655	136,832	9.792
80,347	9,473	99,769	123,607	7,202
	130,176 122,265 85,419 124,521 130,462 112,925 120,413 119,005 108,381 92,514 89,839 99,878 86,894 68,502	130,176 15,630 122,265 15,715 85,419 10,889 124,521 11,744 130,462 13,055 112,925 15,647 120,413 15,050 119,005 13,700 108,381 15,000 92,514 16,856 89,839 14,403 99,878 9,932 86,894 9,674 68,502 6,519 92,299 16,380	130,176 15,630 209,359 122,265 15,715 188,451 85,419 10,889 161,502 124,521 11,744 170,432 130,462 13,055 1772,339 112,925 15,647 151,066 120,413 15,050 170,005 119,005 13,700 163,548 108,381 15,000 136,123 92,514 16,856 121,363 89,839 14,403 112,001 99,878 9,932 107,266 86,502 6,519 89,725 68,502 6,519 89,725 92,299 16,380 108,655	130,176

	Tota	1 Production A	All Grades-Tons	Estimated value
		Pulp	Paper	of production:
1936		392,400	318.153	\$14,950,000
1934	***************************************	383,818	294.183	12,373,000
1933		323,431	260,599	10,852,000
1932		259,586	228,075	11,156,000
1931		310,029	244,397	13,508,000
1930	***************************************	316,056	245.374	16,520,000
1929		279.638	220.501	14,400,000
1928		305,468	241.437	16,755,000
1927		296,253	227,755	18,505,000
1926		259,504	187,313	16,315,000
1925		230.733	157,462	14,466,000
1924		216,243	145,934	13,938,000
1923		217,076	150,637	15,018,000
1922		197,327	132,584	12,590,000
1921	-4	164,746	117,110	13,500,000
1920		217,334	146,624	
1919		189,589	130,809	****************

Source—British Columbia, Department of Lands, Report of the Forest Branch.

PACIFIC COAST STATES

and British Columbia Paper Production (Tons 2,000 lbs.)

State—	1931	1932	1933	1934	1935	1936
Washington	374,765	343,222	381.997	418,115	465,708	526,250İ
Oregon	200,065	182,789	197,970	220,684	242,085	273,5511
California	192,273	139,297	167,033	169,709	221,763	250,5921
British Columbia	244,397	228,075	260,599	294,183	295,410	318,153
Total Coast Production	1,011,500	393,383	1,007,599	1,102,691	1,224,966	1.368,546

Bureau of the Census, Dept. of Commerce. British Columbia figures from the Dept. of Lands, Forest Branch. \$1936 Washington, Oregon and California production estimated on bacis of national average increase over 1936 production.



Photograph by courtesy of the North American Rayon Corporation

pu afte erri joi anu ditt per maa boo cool res goo me to De sec Ass sta in mi mi Ca gee ble pa Lo pl Gr prof for a coo of res ica

thing 19 St. tio

It is not so long ago that bleached sulphite pulp found its only usage in the manufacture of paper » » Paper is still the major market but each year the viscose rayon industry consumes an increasing quantity of high quality bleached sulphite pulp » » Today approximately 80 per cent of all rayon produced in the United States is made from bleached sulphite wood cellulose » » The versatility of rayon is emphasized by its use is both expensive and inexpensive dress fabrics » » This evening wrap is made of quality rayon, La Loie Splerdor Transparent Velvet, produced by Sheldon Looms from North American Rayon Corporation viscose yam.

Weyerhaeuser unbleached sulphite pulp mill at Everett starts operations... after year of construction...ultramodern mill...

Superintendents and TAPPI hold joint meeting in Longview, June 5th and 6th.

JULY—Grays Harbor announces addition of one digester to add 50 tons per day ... rayon grade pulps to be made in larger tonnage... Grays Harbor log breakdown and chipping plant completed in June... St. Regis Kraft rebuilding under way... P. Sandwell goes to Tasmania as acting chief engineer for Derwent Valley Paper Company to return in November... H. Arthur Dunn passes, he was for many years secretary Pacific States Paper Trade Assn...

Soundview second unit construction started... visitors from many pulp making countries visit new Weyerhaeuser mill at Everett....

AUGUST — Crown Willamette at Camas adding kraft capacity ... new digester, etc... Columbia River starts bleach plant construction, 75 tons capacity, single stage... Weyerhaeuser Longview mill plans additional bleach plant capacity for better balance ... Great Northern sets 1937 news print price at \$42.50, to the disappointment of other producers... reports of results for first half of 1936 look better than a year ago... Clarence J. West becomes technical editor of the Institute of Paper Chemistry... prominent as a result of work in pulp and paper, chemical and engineering fields.

SEPTEMBER — Payrolls expand in the pulp and paper industry in Washington... Higher in the first half of 1936 than in the same period of 1929 ... St. Regis aiming to complete construction and start operating in November ... Port Mellon to start early in 1937 ... F. W. Leadbetter says obstacles at last removed and Vancouver Kraft Company now Port Mellon Operating Company will produce pulp early in 1937 ... TAPPI outlines Fall and Winter program of dinner meetings ... first dinner meeting at Everett, October 6th ... U. M. Dickey becomes president of Soundview, Harry H. Fair, chairman of the board ... Albert Bankus elected vice-president of Grown Willamette, Crown Zellerbach and Pacific Mills, Limited ... Weyerhaeuser to build a research laboratory ... George Cropper becomes assistant to D. B. Davies, general manager of Rainier Pulp & Paper Company

The Olympic Primitive Area set aside by Forest Service to enlarge present Mt. Olympus National Monument ... to provide perpetual natural conditions in certain sections of Olympic Peninsula ... Forest Service answer to proponents of Wallgren bill introduced in Congress which would include timber essential to development of any sustained yield program on Olympic Peninsula ... Atlas Paper Company of San Francisco moves to new and larger building ...

aper

nited

ise in

plen-

OCTOBER—Rayon markets expand ...new plants under way to require more wod pulp ... rayon production increasing steadily ... advanced during depression ... Charles H. Ingram succeeds F. R. Titcomb as general manager of Weyerhaeuser Timber Company ... Soundview second unit to be ready February 1st, 1937 ...

Thomas H. Grant becomes sulphite

Thomas H. Grant becomes sulphite superintendent at Columbia River Paper Mills, leaving the Crown Willamette Paper Company mill at Lebanon . . . University of Idaho granted a TAPPI fellowship to continue work on gelatinization of pulps and wood begun a year ago under Dr. Edwin C. Jahn . . W. H. Lowe elected president of the Paraffine Companies, after 32 years service . . . succeeds R. S. Shainwald who served Paraffine 44 years . . . Lebanon mill of Crown Willamette now making a printed or decorated unbleached wrapping paper, improvements made under Dan E. Dupuis, general superintendent . . .

Safety program instituted by Crown Willamette and Crown Zellerbach Corporation a year ago is working out successfully.. frequency and severity of accidents reduced under direction of M. L. Mammen, safety director of Crown Zellerbach... Sydney Roofing & Paper Company of Victoria, B. C., forging ahead, increasing sales, production and earnings... Ivan Wallitner becomes assistant vice-president of Crown Zellerbach.

NOVEMBER—News released of contract whereby Shaffer Pulp Company sells entire unbleached output to Rainier Pulp & Paper Company for a term of years...production to be immediately raised from 65 tons per day to 125 tons...product to be shipped by barge to Shelton for bleaching and drying into rayon grades...gives Rainier additional rayon pulp tonnage quickly...

Pioneer Division, Flintkote Company of Los Angeles, announces plans for immediate construction of new buildings to house new equipment including a new Black-Clawson board machine... capacity to be enlarged 90 tons per day to 160 tons... to make boards and roofings... Carl Sholdebrand becomes sulphite superintendent at Hawley Pulp & Paper Company under vice-president Carl Braun... Ossian Anderson, executive vice-president of St. Regis Kraft Company, announces personnel for reopening Tacoma 180 tons per day kraft pulp mill... mill to start end of November...

Prince Rupert project still in financing stage ... Puget Sound Pulp & Timber Company purchases Morrison Mill Company sawmill, docks and land on waterfront at Bellingham, Washington, adjoining pulp mill ... Morrison sawmill to be converted to breakdown plant for pulp mill ... TAPPI, Pacific Section, holds two day meeting in Portland, November 6th and 7th ... votes

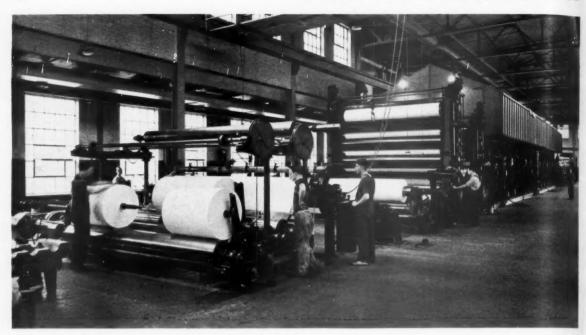
PAPER AND BOARD TONNAGE ADDED TO PACIFIC COAST INDUSTRY

1936 - 1937*

Capacities Given in Tons Per Day

Name of Mill.	Location.	Sulphite Papers	Sulphate Papers	Book Papers	Board	Roofing
British Columbia						
Pacific Mills, Limited	Ocean Falls		50		****	
Washington						
Crown Willamette Paper Co	Camas	25	40		****	
Everett Pulp & Paper Co.1	West Tacoma			35		
Fibreboard Products Co	Port Angeles				25	
Longview Fibre Co.	Longview		20		20	
Oregon Crown Willamette Paper Co.	Lebanon	5			MOUNT.	
California						
California Fruit Wrapping Mills	Pomona	10				
California-Oregon Paper Mills	Los Angeles	20	20			
Fibreboard Products, Inc.					10	
Fry Roofing Co.						15
Pioneer Division, Flintkote Co.					90	
	Totals Total, all grades 385 tons.	60	130	35	145	15

Included paper capacities added during second half of 1936 and first half of 1937.
 Resumed operation June, 1937.



The modern No. 3 paper machine in the Everett Pulp & Paper Company's mill at Everett, Washington, produces quality book papers.

to hold one two-day meeting a year in the future in addition to the schedule of dinner meetings...for 1937 dinner meetings to be held January 19th at Portland, Oregon; February 4th at Vancouver, B. C.; March 2nd at Olympia, Washington, and April 6th at Port Angeles, Washington...

U. S. Pulp producers are leading suppliers of rayon pulp to Japan... In first eight months wood pulp imports up 32.6 per cent... TAPPI medal for outstanding contribution to the technical advancement of the pulp and paper industry, to be awarded to Clarence J. West, editor of publications for the Institute of Paper Chemistry, Appleton...

DECEMBER-Pacific Coast Division of the American Pulp and Paper Mill Superintendents Association hold semi-annual meeting December 4th and 5th

in Portland . . . Fred C. Boyce, founder and first president of the national orand first president of the national organization, was welcome visitor...

Grays Harbor's new unit moving along on schedule... railroads reduce rate on pulp to New England for six months or through June 30th, to benefit Coast pulp mills affected by marine strike...

Woodfiber mill of the British Columbia Pulp & Paper Co. to be further improved and equipped with a modern and new bleach plant... will be able to produce either bleached or unbleached

proved and equipped with a modern and new bleach plant . . will be able to produce either bleached or unbleached at Woodfibre . . Lawrence Killam, president, non-committal on plans for

reson pulp...

Dean Harry F. Lewis of the Institute of Paper Chemistry, Appleton, visits Coast . . makes talks before chemists, Coast . . . makes talks before chemists, students, pulp and paper men . . Pacific Safety Paper Mills make check and other papers which must be protected against fraud . . . Installation of machin-

ery for Pomona Paper Products new onverting plant adjacent to California Fruit Wrapping mills in Pomona, delayed by marine strike as some machinery on ships... Accident prevention is an operating problem said John W. Bagwill in an article on safety...

Andrew Cochran, Pacific Coast representative for the Mead Corporation and subsidiaries and before that with the Cascade Paper Company in the sales department, was transferred to Chicago where he will retain supervision over Coast sales...H. Arthur Dunn, Jr., elected to succeed his father as secretary of the Pacific States Paper Trade Association. Association .

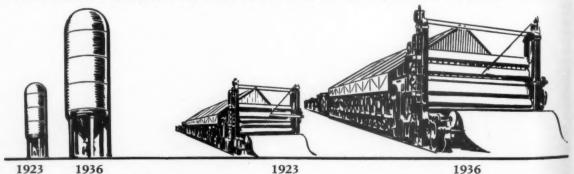
pakir rag wo tier from the sub other
tons

ton: A 1 the

doz ufactor of to

Paper Supply Company makes unique products...converter of Cellophane produces odd products...successful... and the year 1936 ends...a very busy one on the Pacific Coast.

COMPARATIVE GROWTH OF PACIFIC COAST PULP AND PAPER INDUSTRY—1923-1936



Total Daily Capacity All Grades of Pulp

1923-2,045 tons

1936-6,797 tons. Increase: 232%.

1936

Total Daily Capacity All Grades of Paper and Board 1923-2,056 tons

1936-4,897 tons. Increase: 138%.

Looking Back 55 Years At the Pacific Coast Industry of 1882

A Brief Summary of Pulp and Paper Making in the Far West As Recorded at the Time*

Paper

"Four varieties of paper are made on the Coast, printing, manila, straw, and pasteboard. In manufacturing the first kind, the materials chiefly employed are kind, the materials chiefly employed are rags, old paper, and, within the past year, woodpulp. Manilla of the better quali-ties, such as is used for bags, is made from old manilla rope. For the inferior products, as heavy wrapping paper, bur-lap (coarse bagging) furnishes the raw material. Straw paper, as its name implies, is made entirely of straw, that of wheat being usually preferred. Pasteboard wheat being usually preferred. I also made from straw, the pulp being subjected to hydraulic pressure. Various other substances have been used unsuccessfully, including the stem fibers of the yucca growing abundantly in the arid tracts of Southern California and Arizona; the tule, a coarse reed found in the marshes along the Sacramento and San Joaquin rivers, and coarse grass gathered along the Columbia River, after the subsidence of a flood. The American aloe, or century plant, has likewise been used for this purpose, and an incombustible paper has been made in very small quantity from asbestos. The first small quantity from asbestos. employed here in the industry was found to contain so much silica, that it could not be bleached by ordinary pro-As the portion used was cut by a machine that severed the stalk about 9 inches from the head of grain, the lower part of the growth was examined and found free from the objectionable matter. Only the middle of the stalk is now

"The annual production of paper on the coast is about 1,800 tons of printing, worth at wholesale \$160 per ton; 1,000 tons of manilla, sold for \$180 per ton; and 2,400 tons of straw wrapping, and 300 tons of pasteboard, each sold at \$60 per ton; making in all 5,500 tons, worth \$630,000. The annual consumption is more than 6,000 tons of printing, 2,500 tons of wrapping, 1,300 tons of manilla tons of wrapping, 1,300 tons of manilla, and 750 tons of pasteboard, leaving 5,000 and 70 tons of pasteboard, leaving 2,000 tons to be supplied by the Eastern states. A portion of that supply, especially in the finer qualities of book and label paper, comes from the Boston house of S. D. Warren & Co., who have about a dozen paper mills in various parts of New England. No writing paper is manufactured on the coast and the imports ufactured on the coast, and the imports of that article probably amount to \$350,-000 annually, four-fifths being received at San Francisco. The value of the envelopes consumed yearly is about \$150,000, or, at \$4 per 1000, 25 to each inhabitant of the coast north of Mexico.

36

"Of the raw material consumed by our aper mills yearly, 1000 tons are rags, 5,500 tons wheat straw, and 1,000 tons

The rags are gathered mostly by Chinese in our towns, and cost \$45 per ton; straw sells for \$5.50 per ton. and manilla stock for \$60 per ton. About \$350,000 are invested in buildings and machinery; the working capital amounts and \$100,000, and employment is furnished to 200 persons, one third of whom are women and minors. The men are paid \$2 per day, and the others from \$1 to \$1.25, a day's work being 10 hours. In all, 10 paper-mills have been built on the coast, the earliest erection of the kind being in 1856. Of these, 8 were put up in California, and one each in Oregon and Utah. There are 7 remaining. gon and Utah. There are 7 remaining. Of the 3 mills no longer in existence, the one in Utah was built by direction of Brigham Young, at Salt Lake City, about 20 years ago, and was discontinued for want of support. The Eagle Mill at Punta Arenas, Mendocino County, California, was unsuccessful by reason of lo-cation, being too remote from the sources of supply for its raw material. The third establishment now closed was built in Los Angeles County, to use the yucca fiber, and was unable to compete with Eastern manufacturers. The production paper on the coast is not equal to onehalf the consumption; in fact, the consumption of printing paper alone is greater than the total production. Most of the printing paper is used for book and other work outside of newspaper issues, that consumption being now clearly supplied by home production. The material that by its abundance and cheapness enables our manufacturers to compete most successfully with Eastern producers, is straw. The most productive establishment is that of the California Paper Manufacturing Company, whose works are at Stockton. Capital amounting to \$300,000 is invested, and 80 hands employed.

Lick Paper Mill

'The mill of the Lick Paper Company at Alviso, California, was built as a flour mill in 1852 by James Lick, the noted philanthropist. In his early years he had been a millwright and cabinet-maker, and when he found himself wealthy in California, he gratified his pride as a mechanic by building a mill which not only turned out the best flour then made in the state, but was finished with polished mahogany, at an expense of several hundred thousand dollars. The situation, however, was inferior for grist purposes to that of many other mills built afterwards, so it was converted into the Lick Paper Mill, the production of which, comprising printing, manilla, cartridge, and hardware paper, is about 2 tons per day, the raw material being procured from junk dealers in San Francisco. Special machinery has recently been introduced capable of manufacturing from 75 to 200 paper bags, of the satchel-bottom to 200 paper bags, of the satchel-bottom pattern, per minute, the number depending on the size of the bag. The working force consists of 20 men. The present company was incorporated in 1880 with a capital of \$100,000, with F. H. McCormick as president and F. N. Delanoy secretary. The first mentioned has been on the coast since 1865, and went into business in San Francisco in 1876. The secretary came here in 1874. The products of the mill are sold chiefly to the trade by the company's agents in San Francisco, McCormick & Delanoy, shipping and commission merchants, whose office is at 109 California Street.

The Pioneer Paper Mill

The Pioneer Paper Mill, the first one on our slope, was built in 1856 on the bank of the San Geronimo, or, as it is now generally called, Paper Mill Creek, in Marin County, California, 15 miles from San Rafael, in the midst of beautiful reduced rishes. A willing heaven ful redwood timber. A village has grown up about the mill, and in the summer there is an additional population of campers, who find favorite resorts in the vicinity. Power is supplied by the creek vicinity. Power is supplied by the creek during half the year, and by steam dur-ing the dry season. Employment is given ing the dry season. Employment is given to 20 hands, who receive from \$30 to \$50 a month. The mill was erected by S. P. Taylor & Co., who still own and run it, and dispose of its product, about 300 tons of manilla, at their paper warehouse at 414 and 416 Clay Street, San Francisco. Mr. Taylor, the senior member of the firm, a native of New York State, and a resident of California since the spring of 1850 has served the city of San spring of 1850, has served the city of San Francisco as supervisor for one term in a creditable manner.

"Other mills on our coast are those of E. T. King & Co., at Saratoga; Brown Brothers & Watson, at Corralitos; the South Coast Paper Mill, at Soquel; and the Clackamas Paper Mill, near Oregon City. The last mentioned was established in 1868 by the present proprietor, H. L. Pittock, who has \$50,000 invested in the The last mentioned was established industry, employs 25 hands, and turns out news, manilla, and coarser papers to the value of \$50,000 annually.

*Excerpt from "COMMERCE AND INDUSTRIES OF THE PACIFIC COAST," by John S. Hittell. Published by A. R. Bancroft & Company, San Francisco; Second Edition, 1882. Chapter XXXIII, Paper, Printing, Etc.
The attention of the Crown Willamette Paper School at Camas, Washington, was called to Mr. Hittell's book by George P. Berkey, vice-president of the Crown Zellerbach Corporation, Portland, Oregon, who had the chapter copied. It was read in part at the graduation dinner of the Paper School on March 1st, 1937, by A. G. Natwick, assistant mill manager at Camas and dean of the Paper School.



Photograph by courtesy of E. I. duPont deNemeurs &

Wood pulp draperies and bedspreads would have sounded fantastic a few years ago, but today Du Pont so "Very new and smart are these rayon draperies and matching bedspread in a hand-etched design which look like free-hand brush work » » The pattern is in sepia on light rose, and the rayon content has permitted effective contrast of bright design and delustered background."

TRY

ich loo mitted 4

Analysis of

Available Pulpwood Supplies In Western Washington and Oregon

Further Revision and Definition of the Forest Service Survey Data*

P TO this time, pulpwood for mills in western Washington and western Oregon has largely come from sawmill waste in the manufacture of hemlock and spruce lumber, partly from pulpwood logs, and in lesser tity from forest cut cordwood. With cer-tain exceptions, pulpwood supplies have been more or less incidental to other forms of logging and manufacture.

Much of the pulpwood has come from imber stands of the Douglas fir and western red cedar types, in which the pulp species themselves form only a small percentage of the total stand. Extensive stands of this type still remain, but will undoubtedly be logged out in large measure in the relatively near future. Pulp species, which have been inthe main logging program, will then have to carry more of the overhead logging cost than in the past. Because of this and because of the grow ing scarcity of plupwood from this source, greater exploitation of the pulpwood types of stands, that is, those in which pulp species predominate, is sure

Detailed study of the pulpwood species resources, without reference to the even greater resources in the Douglas firpredominate types, is important in shaping the future of the pulp and paper dustry. Recent surveys by the Pacific Northwest Forest Experiment Station of United States Forest Service have made available considerable data which provide much information on the sub-

Pulpwood Distribution

The total cubic volume of pulpwood species available for cutting in western Washington and western Oregon is nearly 39 billion cubic feet, equivalent to 378 million cords. Western Washington holds almost 70 per cent of this volume. Central Puget Sound and the Grays Harbor area have, in fact, a total of 41 per cent of all the pulp timber in the entire region, each of the units having more than 8 billion cubic feet.

Defining Availability

The term "available for cutting fers to that timber which is not affected by laws or declared public policy against commercial cutting. That which is not commercial cutting. That which is not considered available includes timber in state parks and national parks, watershed property and the like. "Available for cutting" does not necessarily mean that the timber is available for sale to loggers, nor that it is necessarily economically available.

Of pulpwood volume in this area, Western hemlock constitutes 62 per cent of the total and is the predominating species in every one of the designated forest units, with the exception of the Umpqua River and the Rogue River units. The heless fire which send that the control of the tent of the t units. The balsam firs, which rank next in pulpwood volume west of the Cas-cades, lead in these two forest districts.

Pulpwood timber does not mean tim-ber of pulpwood size, but refers to species. Only 20 per cent of the stands are of what is commonly referred to as

pulpwood size, that is, under-story and second growth trees. Fully 80 per cent of the total is in saw log size. Since some of the logs of this size will naturally be used for lumber and other products rather than as pulpwood as such, this must be taken into consideration in any study of the subject.

Ownership

The pulp timber volume shown in Table I is about 46 per cent privately 42 per cent is on national forests and the remaining 12 per cent is on other public lands, such as county, state, Indian, etc. This is shown in greater detail in the Economic Availability table. In this, public lands other than partional forests are ground with private table. In this, public lands other than national forests are grouped with private timberlands, for the reason that they are usually scattered among privately owned lands and would be operated in conjunction with them.

Only Soundwood Included

In these tables, cubic volume estimates give the total sound wood content of the stem of the tree, exclusive of barks and limb wood. Decayed material is omitted, as well as the entire volume of all cull trees having more than two-thirds of the board-foot content defective. No deduction is made, however, for hysakage in longing. for breakage in logging.

Table I reveals that western Washington holds more than twice as much of the pulp species available for cutting, as does western Oregon, and practically three times the quantity of the important hemlock species. Geographical tribution of the totals is shown in Table

*Article prepared from data supplied by the Pacific Northwest Forest Experiment Station, U. S. Forest Service, Portland, Oregon.

VOLUME IN CUBIC FEET OF PULPWOODS FOR ALL OWNERSHIPS, 4 INCHES AND MORE IN DIAMETER BREAST HEIGHT, AVAILABLE FOR CUTTING

Species—	Western Oregon	Western Washington	Totals
Western Hemlock	6,146,972,000	17,905,401,000	24,052,373,000
Sitka Spruce	1,142,498,000	1,601,977,000	2,744,475,000
Balsam Firs*	3,555,999,000	6,978,520,000	10,534,519,000
Mr. Hemlock and Engelman Spruce	946,038,000	352,629,000	1,298,667,000
Black Cottonwood	68,128,000	123,170,000	191,298,000
Totals	11,859,635,000	26,961,697,000	38,821,332,000

^{*}Includes Silver fir, White fir, Noble fir, Shasta red fir, Lowland white fir and Alpine fir.

Economic Availability

The mere presence of a large quantity of pulp timber in an area is not all-important in itself, however. Mountain hemlock and Engleman spruce, for instance, are definite pulp species, but usually occur in scattered stands and remote locations, and therefore are rel-

atively unimportant. The type of site plays an important part in the feasibility of logging and in the economic availability of the timber. Western hemlock-Sitka spruce types principally occur on good sites and are accessible; the remaining species usually occupy poorer sites and are less accessible.

Ownership also is a factor to be considered. National forest timber, even if available for sale, is usually in the more rugged country and not profitable to log. The balsam fir-mountain hemlock group is largely in public ownership, chiefly in national forests. Timber of the Western hemlock-Sitka spruce type is chiefly in private ownership.

Table II.

VOLUME OF PULP WOODS, OTHER THAN DOUGLAS FIR, IN WESTERN WASHINGTON AND WESTERN OREGON AVAILABLE FOR CUTTING

In Thousands of Cubic Feet

WASHINGTON		OREGON	
District and County		District and County	
North Puget Sound-		Columbia River—	
Whatcom County	1,006,741	Clatsop County	1,089,450
Skagit County		Columbia County	48,139
Snohomish County		Washington County	84,693
San Juan County		Multnomah County	227,155
Island County		Hood River County	
Island County		Clackamas County	1,141,042
District Total	5,130,119	District Total	3,015,379
			.,,
Central Puget Sound-		Willamette River-	
King County	2 166 024	Yamhill County	*
		Polk County	
Pierce County		Marion County	
Kitsap County		Benton County	
Mason County		Linn County	, , , , ,
Clallam County		East Lane County	1,455,990
East Jefferson County	264,776		
District Total	8,011,209	District Total	3,750,945
District A Otal			
		North Oregon Coast—	
6 1 5 6 1		Tillamook County	984,874
South Puget Sound-		Lincoln County	
Thurston County		West Lane County	7 1.75
Lewis County	2,423,835	West Lane County	
District Total	2,477,653	District Total	1,765,220
		Umpqua River—	
Grays Harbor—		East Douglas County	1,243,033
West Jefferson County		District Total	1,243,033
Grays Harbor County			-,,
Pacific County	1,908,220	South Oregon Coast—	
		West Douglas County	392,461
District Total	8,002,226	Coos County	
		Curry County	
		District Total	1,013,067
Columbia River, Wash.—		District I vidi	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Wahkiakum County	508,615		
Cowlitz County	972,384	Rogue River-	
Clark County	34,248	Josephine County	
Skamania County '	1,825,243	Jackson County	961,702
District Total	3,340,490	District Total	1,071,991
Total Washington		Total Oregon	
total washington	20,901,09/	total Oregon	11,000,000

Y

if

ip,

N

150

39

593

55

ากก

342

179

369

273

262

000

374

541

220

033

033

161

653

953

067

289

702

991

Some of the timber included in Tables I and II is, then, not "economically ripe." This does not mean, however, that it cannot ever be logged at a profit. Changing economic conditions, changes in methods of logging, in transportation, and in other engineering and economic factors, may later make certain timber available that cannot now be taken with profit.

In order to determine more accurately just what is the actual volume of timber that will be available under a given set of conditions, the timber represented in Table I and II has been evaluated according to economic availability, and divided into three classes. Table III shows the percentages which fall into each class.

Class 1 represents timber that could be logged at a profit under the production and marketing conditions during the five years of 1925-1929. Class 2 includes timber that under those conditions could be logged at a loss of not more than \$5 per thousand board feet. In other words, it includes timber that can be profitably logged when and if log prices rise to that extent, or logging costs can be reduced \$5 or more per thousand board feet. Class 3 includes all remaining timber.

From this table, many interesting points may be learned. First glance clearly shows that a much greater volume of privately owned timber is now economically available than that under national forest ownership. Only in the South Oregon Coast unit is a greater percentage of the national forest timber in Class 1 than that of private forest. In total, however, the national forests of western Washington contain more Class 1 timber than do those of western Oregon.

Grays Harbor Favored

The favorable position of certain areas is also clearly shown. Grays Harbor, for instance, not only has the largest amount of privately owned pulp timber in volume, but the highest percentage of economic availability. National forest timber in the area, while not as great in quantity as in Central Puget Sound district, has a greater percentage in Class 1. It will be noted, however, that should economic conditions change so that Class 2 timber can be logged at a profit, the Central Puget Sound district will surpass Grays Harbor in suitable national forest timber and nearly equal it in the private ownership class.

This table forms a basis for numerous other detailed tables for use in studying specific districts, which can be worked out from it when occasion requires.

The current annual depletion of timber of pulpwood species in the region not including logging waste, is slightly greater than the current annual growth, but is considerably less than the potential annual growth under strict forest management, even including loss from cutting, fire, insects, etc.

The figures show that, depending on the extent to which these species are used for lumber and on the integration of pulp mills with sawmills, a pulp and paper industry several times its present size could be maintained entirely from present timber resources.



The above map of Western Oregon and Western Washington shows by counties the total volume in thousands of cubic feet of pulpwoods, other than Douglas fir, available for cutting > > > Figures from Table II.

TABLE III

ECONOMIC AVAILABILITY OF PULP SPECIES, OTHER THAN DOUGLAS FIR, OF SAW TIMBER SIZES IN WESTERN OREGON AND WESTERN WASHINGTON

-	Private and	Private and public lands other than national forests Portion of volume included in class	Port incl	han national forest Portion of volume included in class	l forest olume class	s	National Forests - Port	Portio inclu	Portion of volume included in class	ume		
Unit.	Volume	Volume	1+	2‡	300	Volume	Volume	1+	2‡	900	Total Volum	Total Volume All Ownerships
Western Oregon	Cords	Cubic Feet*	Pct.	Pct.	Pct.	Cords	Cubic Feet*	Pct.	Pct.	Pct.	Cords	Cubic Feet
Columbia River	17,703,000	1,838,028,000	71	27	2	11,480,000	1,177,351,000	20	20	10	29,183,000	3,015,379,000
Willamette River	14,912,000	1,529,363,000	57	40	3	21,749,000	2,221,592,000	20	89	12	36,661,000	3,750,945,000
North Oregon Coast	14,795,000	1,508,239,000	19	37	2	2,474,000	256,981,000	46	53	-	17,269,000	1,765,220,000
Umpqua River	2,740,000	313,598,000	23	69	12	9,045,000	929,435,000	4	20	26	11,785,000	1,243,033,000
South Oregon Coast	8,279,000	891,761,000	74	25	1	992,000	121,306,000	98	5	6	9,271,000	1,013,067,000
Rogue River	4,010,000	429,614,000	39	45	16	6,302,000	642,377,000	22	19	17	10,312,000	1,071,991,000
Total Western Oregon	62,439,000	6,510,593,000	62	35	l w	52,042,000	5,349,042,000	70	99	14	114,481,000	11,859,635,000
Western Washington												
North Puget Sound	24,662,000	2,557,264,000	46	44	10	25,351,000	2,572,855,000	25	99	19	50,013,000	5,130,119,000
Central Puget Sound	47,179,000	4,799,053,000	09	37	3	31,896,000	3,212,156,000	41	46	13	79,075,000	8,011,209,000
South Puget Sound	12,730,000	1,295,846,000	62	33	8	11,556,000	1,181,807,000	22	09	18	24,286,000	2,477,653,000
Grays Harbor	55,052,000	5,677,220,000	69	27	4	23,267,000	2,325,006,000	52	30	18	78,319,000	8,022,226,000
Columbia River	15,843,000	1,639,115,000	9	31	4	16,377,000	1,701,375,000	17	69	14	32,220,000	3,340,490,000
Total Western Washington 155,466,000	155,466,000	15,968,498,000	62	33	100	108,477,000	10,993,199,000	34	20	16	263,913,000	26,961,697,000
Western Washington	217,905,000	217,905,000 22,479,091,000	62	34	4	160,489,000	16,342,241,000	29	55	16	378,394,000	38,821,332,000

†Class 1—Timber that could be logged at a profit under the production and marketing conditions during the five years 1925-1929. *Cords multiplied by 86 cu. ft., as determined by J. E. Lodewick. See Pacific Pulp & Paper Industry, September, 1935. ‡Class 2—Timber that under those conditions could be logged at a loss of not more than \$5 per thousand board feet.

&Class 3—The remaining timber.

The relation between the volume figures in cords and in cubic feet in Table III differs from that ordinarily found, due to the fact that the usual conversion factor of 86 (86 cu. fr. solid content to the standard cord) was not used, but instead, several different factors derived from standards of utilization. These utilization factors were determined from the percentage of the total cubic volume utilized for pulpwood under general pulpwood cutting practice, for each class of trees. On the basis of the utilization standards specified for various classes of trees, the cubic volume of saw-timber trees represented in the total was converted to cords by dividing by 98, for understory trees by 132, and for second growth trees by 123.

1

to pp a a firm with the control of t

New Forestry Legislation Affecting the Pulp Industry

A Summary of Forestry Laws Adopted by the 1937 Oregon and Washington Legislatures

NUMBER of laws were enacted by Athe 1937 legislatures of Washington and Oregon which are of interest and importance to the pulp and paper industry in the two states. They are also of vital importance to the are also of vital importance to the further utilization of Pacific Northwest pulpwood resources, for some of these new laws will permit much progress toward the goal of sustained yield forestry. This in turn will provide a perpetual supply of raw material for the pulp industry and for the lumber industry.

The lack of adequate legislation to enable state forestry officials to take the initiative in working toward placing forestry on a permanent crop basis, has long been a primary handicap. State officials have not been free to cooperate fully with the Forest Service, other state

fully with the Forest Service, other state departments or with private owners of timber lands, to meet new conditions in forestry as they arose. In other words our forestry laws have been, and some are still obsolete. Their inflexibility causes waste of timber and prevents the very necessary reforesta-tion of cutover and burned over lands, if the Pacific Northwest is to be a per-

petual timber growing region. In recent years men with the vision of what can be accomplished by modern forestry practice have been devoting their time and energies to a revamping of the forest laws. Progress has been of the forest laws. Progress has been made which is most encouraging, but much work remains to be done, particularly the revision of tax laws which now frequently force uneconomical liquidation of standing timber. Education of the public to the necessity of change will continue, and it is hoped that the enlightenment will come soon to stimulate the further expansion of

that the enlightenment will come soon to stimulate the further expansion of timber using industries.

This works both ways. Public enlightenment comes also from the development of timber using industries which brings the necessity of sustained-yield forestry to public notice in a forceful manner. Continued expansion of the pulp industry in the Pacific Northwest has been frequently emphasized by forestry authorities as being the most effective means of modernizing our federal, state and private policies toward timber. Development of pulp and paper making in this region pulp and paper making in this region during the last decade has been a very important factor in creating a public realization of the need for changes in legislation to bring about a more stable and a balanced forest economy.

Oregon Legislation

POUR BILLS affecting forestry were enacted during the 1937 session of the Oregon legislature at Salem; four the Oregon legislature at Salem, solubills of the same type failed to pass.

Those enacted into law were:

House Bill 405: The appropriation bill for the State Board of Forestry,



Large Sitka spruce, approximately 60 inches in diameter, near Cannon Beach, Oregon.

providing a total of \$182,000 for the present biennium. This was an increase of \$64,000 over the previous biennium, and will materially strengthen the activities of the department. It provides for increased inspection to take care of the larger number of woods operations, and also for the maintenance of CCC improvements. As a condition to the establishment of CCC comps on state and private land in Oregon, the state undertook to maintain the improvements constructed by the CCC.

House Bill 249: This bill extends the season when permits for burning are required from May 15 to Dec. 31. instead of the previous dates May 15 to Oct. 15. The governor is empowered to terminate it earlier by proclamation whenever weather conditions make such action desirable. The previous law provided for extension of the season by the governor, but that authority has been questioned by the courts as delegating legislative authority to the executive. Further, in past years when the governor extended the season, many illegal fires were set during the extension, the individual pleading ignorance to the extension.

Senate Bill 328: Permits the State Foresters to select assistant state foresters with approval of the board, and authorizes him or the Board to designate any one of them as Acting State Forester in event of his absence. It amends the present law, which heretofore provided for only one deputy state forester. The

new law will give the State Forester administrative assistants to handle work with the CCC, Clarke-McNary law enforcement, reforestation, etc.

House Bill 339: Sponsored by the

House Bill 339: Sponsored by the cattle men, who claimed that much land now covered with useless brush could be converted into good cattle range, this bill had for its purpose the shaping of a forest policy under the state forest code, giving consideration to the need for forest range for cattle. As passed the bill is permissive only, but adds one member to the State Board of Forestry, to be selected upon recommendation of the cattlemen's associations, making nine members in all.

Bills relating to the following matters failed of passage during the session; making the operator's permit year long and requiring bond; state acquisition of forest lands; providing for ash trays in all automobiles; providing for zoning and valuation of timber lands by the State Tax Commission, as a basis for taxation.

Washington Legislation

A T THE 1937 session of the Washington State Legislature the measure to set up a yield tax on mature timber, sponsored by the State Tax Commission as a method for eliminating the excessive tax burden on standing timber, failed of passage.

Other constructive forestry legislation was passed and has become law. T. S. Goodyear, supervisor of forestry of the State of Washington Department of Conservation and Development has summarized the recent Washington forestry legislation for PACIFIC PULP & PAPER INDUSTRY, as follows.

"A number of forestry bills were introduced in the 1937 legislature to meet changing conditions, or rather the transition from old style logging to the new and modern system that provides for closer utilization of forest products made possible by a market for pulpwood.

possible by a market for pulpwood.

"The state's fire protection program has been considerably strengthened by the new laws. A number of other bills form the nucleus for establishing state forests, to be selectively logged and managed upon a sustained yield basis. The balance of the legislation is for the purpose of speeding up the state forest land acquisition program.

siccoco for sold the firm in quech ute ra a two per a st habit should be sho

"THERE IS NOW SUFFICIENT AND VARIED LEGISLATION FOR THE ESTABLISHMENT OF A SOUND, PERMANENT FOR EST POLICY IN THE STATE OF WASHINGTON, WITH ADEQUATE PROVISION FOR FUTURE DEVELOPMENT OF THE PULP AND PAPER INDUSTRY.

"During the past year the state has acquired about 300,000 acres of tax delinquent forest lands. This area will be increased by another 300,000 acres before the close of 1937. When this land is transferred to the state it is immediately put under intensive forest fire protection and, where necesary, will be planted with trees from the state nursery.



The State of Washington tree nursery in the Black Hills between Bordeaux and Elma, Washington >>> Some 5,000,000 seedlings a year are being grown for planting in cutover and burned over areas throughout the state, as part of the reforestation program of the Division of Forestry, Washington State Department of Conservation and Development.

has

ULP

meet ran-

new for

bills state

asis for

tate

OR

ST

SH. RO. OP.

ER

de. be be

and fire be

"For the past three years the Divi-sion of Forestry of the Department of Conservation and Development has been Conservation and Development has been constructing and developing a state forest nursery situated some fifteen miles southwest of Olympia and located in the midst of some 52,000 acres of the finest timber producing land in Washington, all of which was recently acington, all of which was recently ac-quired by the State Forest Board in ex-change for seventy five year general utility bonds bearing an annual interest rate of one per cent.

"The nursery has a capacity for 5,000,000 trees per year and was constructed and developed by men from the Elma CCC camp under the supervision of the State Forestry Division. It consists of a suitable office building and housing quarters for a nurseryman. and housing quarters for a nurseryman, a dormitory and living quarters for twenty men, a large warehouse equipped with steam heat for drying cones, a complete seed extraction plant, large storage root house and cooler, a warehouse and shop for constructing seed bed frames and wrapping stock for shipment, a complete lighting plant and overhead sprinkling system, six acres of land in seed beds and ten acres in pro-cess of cultivation for additional beds.

"The Washington nursery represents one of the most complete and best equipped plants on the West Coast, it is the first of several units to be estab-lished for the purpose of regenerating forests on cutover school lands, and is part of the forest conservation program sponsored by the governor and favorably acted upon by the legislature."

Mr. Goodyear briefs the forestry legislation passed in the 1937 legislative session as follows:

Fire Season

"Senate Bill No. 203 extends the closed fire season, The old law provided for closed season between May 1 and October 1. Each year numerous fern and slashing fires are set after the middle of April that cause considerable damage to young growth timber. During closed season the state expends considerable money and effort in an attempt to regulate fires by issuance of burning permits. Hazardous fire weather conditions often prevail after the close of fire season and yet the state had no authority to regulate or control slash burning. It was therefore recommended the state extend the closed fire season from April 15 to October 15.

Christmas Tree Tax

"Senate Bill No. 204 provides for colper tree for every Christmas tree shipped outside the state. The Christmas tree business in the State of Washington has developed into an important industry and is principally controlled by interests outside the state. This bill was introduced for the purpose of com-pelling the shippers of Christmas trees management and protection of the crop they annually harvest; also to eliminate the enormous waste of trees that to contribute in are cut and never used.

Better Protection State Timber

"Senate Bill No. 205 merely amended existing statutes by eliminating requirements that counties remit annually to the state one-third of all monies ex-pended from the general fund in the respective counties for forest fire pro-tection. Some of the poorest counties contain the largest stands of state timber. This bill permits the protection of state owned timber without jeopardizing the finances of the counties in which state timber is situated.

Authorize Bonds

Senate Bill No. 210 authorizes the suance by State Forest Board of issuance \$300,000 in general utility bonds which be used to purchase lands for establishment of state forests. The in-terest and retirement of bonds is paid from monies collected from sale of wood products from the land.

Regulates Grazing
"Senate Bill No. 361 provides for regulation of cattle grazing on state owned lands, the fees from which will return many thousands of dollars annually to the school fund. Before, there were no existing statutes that made any provisions for cattle grazing on state land.

Property Deeds
"Senate Bill No. 366 merely authorizes counties, cities or towns to deed to the State Forest Board suitable building sites for warehouses and supply depots for fire protection purposes.

Exchange of Forest Lands
"House Bill No. 274 provides that counties, cities, municipalities, the federal government, and State Forest Board may exchange forest lands each with the other for the purpose of blocking out forest holdings into sizable areas that may be administered economically on a sustained yield basis. At present

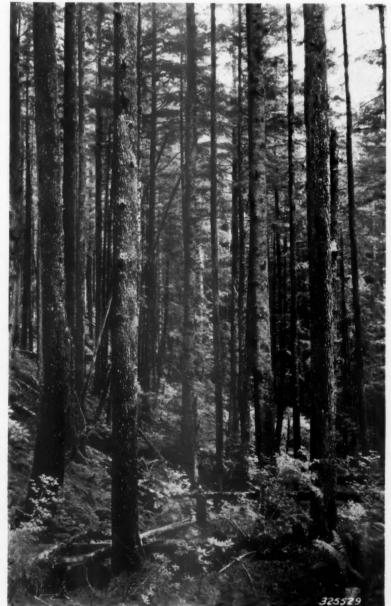


Photo by U. S. Forest Service.

A mixed Western hemlock-Sitka spruce stand approximately 30 years old, along the Summit Road, a quarter mile from the highway, Cascade Head Experimental Forest.

forest holdings are so intermingled that it is an impossibility to block them into workable areas.

May Sell By Scale

"House Bill No. 275 permits the State Forest Board to sell timber by scale instead of by cruise. It is not good forest practice to sell all of the standing timber on certain areas, since much of the timber is immature and should not be harvested. Authorization to sell by scale allows the removal of timber that is ready for harvest and also places the state in a position to require that certain immature timber and seed trees be left standing. It also per-

mits the salvage of wind-thrown and fire-killed timber which was impossible under the old status that required the state to sell everything or nothing on its lands.

Fire Regulations and Equipment

"House Bill No. 330 requires certain standard fire fighting equipment in each and every logging operation; requires that logging locomotives be followed by speeder patrol in slash areas during fire weather; compels logging operators to employ all available employees on a fire until authorized by state forester to decrease the crew; and authorizes state supervisor of forestry to close down all

logging operations when weather conditions present an extreme fire hazard. This bill considerably strengthens existing fire protective measures.

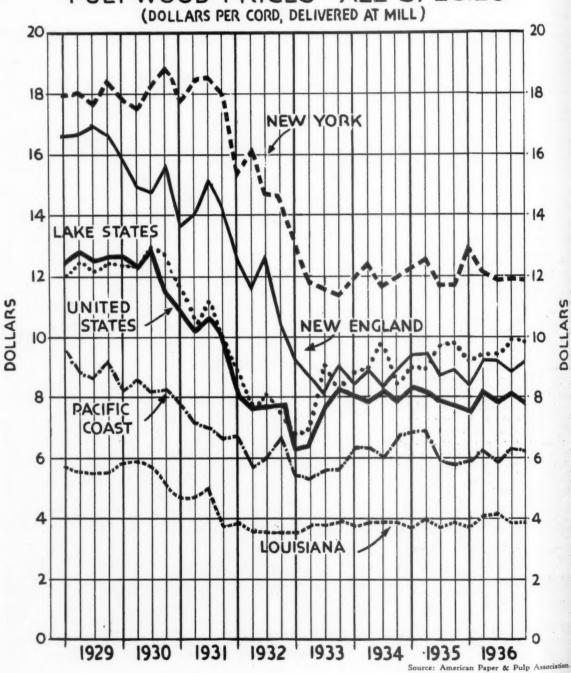
Delinquent Tax Land

"House Bill No. 508 permits individuals and corporations to offer land to State Forest Board and the board to accept such lands subject to delinquent taxes. This eliminates the necessity of waiting six years for delinquency and foreclosure proceedings, during which time absolutely no development takes place and forest fires often destory the reproduction. The bill facilitates blocking of state forests into areas

Ri A ma

the in pe the sli

PULPWOOD PRICES-ALL SPECIES



ard

Xist-

ndi-

pard elin-

ring

Foreign Pulp Supplied 81% of U. S. Market in 1936

Ratio Unchanged From 1934 and 1935

A S in both 1934 and 1935 foreign wood pulp producers sold four-fifths of the wood pulp sold on the market in the United States.

Domestic producers of pulp for the market gained slightly, one-half of one per cent, in their share of the American market. The exact percentages for 1936 were 18.72 per cent sold by United States producers and 81.28 per cent sold by foreign manufacturers.

Although wood pulp production in the United States gained 15.6 per cent in 1936 over 1935, imports rose 17.8 per cent above 1935. On the basis of these percentages it is evident that a slightly larger proportion of the wood pulp made in this country was sold on the market in 1936 than in 1935.

In spite of increased production American producers made almost no headway in displacing imported pulp.

The Foreign Share

Imports again set a new record with 2,277,829 short tons for chemical and mechanical pulp valued at \$82,881,000 as compared with the 1935 imports of 1,933,643 short tons valued at \$70,760,-951

The increase in imports amounted to 344,186 tons or 17.8 per cent over 1935. In value the 1936 import increase was \$12,130,049 or 17.1 per cent.

\$12,130,049 or 17.1 per cent. Comparison of the 1936 imports of wood pulp with the total for 1934 shows a surprising advance of 26.1 per cent in tonnage or 471,701 tons more. The rise in value of the imported pulp in two years' time is even more impressive with a 34 per cent increase or \$21,040,731 over the value in 1934 of \$61,850,269.

The imports during 1936 reached the two million ton mark for the first time in history, but the value was surpassed by three previous years imports, 1926, 1927 and 1929. In 1926 the value of the wood pulp imports into the United States was \$91,487,071 or \$8,596,071 more than the value of the 1936 imports. The 1936 value was 9.3 per cent less than the value in 1926.

The Domestic Share

Pulp mills in the United States producing wood pulp for the market garnered but 18.72 per cent of the domestic market. They increased their sales 86, 362 tons, all grades, in 1936 over 1935 or 19.5 per cent and 141,717 tons of all grades or 36.5 per cent over their 1934 sales to domestic converting mills.

The sales of sulphite pulp by United States mills to domestic buyers amounted to 494,325 tons or 81,694 tons more than the 328,460 tons in 1935, an increase of 19.8 per cent. The 1936 sales were 133,096 tons greater than the 361,-229 tons sold in 1934 or 36.8 per cent.

Bleached sulphite sold to buyers in this country during 1936 totalled 391,252 tons, 62,792 tons or 18.9 per cent greater than the 1935 sales of 328,460. The 1936 increase over 1934's figure of 282,738 tons amounted to 108,514 tons or 38.3 per cent.

Unbleached sulphite pulp sold in 1936 attained the total of 103,073 tons. This was 18,151 tons or 21.3 per cent greater than the 84,921 tons sold in 1935, and 23,698 tons or 29.8 per cent larger than the 79,375 tons sold in 1934.

Total sulphate sales made by American kraft pulp mills to domestic purchasers reached 15,852 tons in 1936, an increase of 7,645 tons or 93 per cent over the 1935 tonnage sold of 8,207 tons. The 1936 sales were 11,470 tons greater than the 4,382 tons sold in 1934 or 262 per cent.

Bleached sulphate pulp sales in 1936 of 1,577 tons, increased but 1 per cent over the 1934 tonnage of 1,563 tons, and 386 tons or 33 per cent over the 1934 tonnage sold which amounted to 1,191 tons.

Unbleached sulphate pulp sold by United States mills to domestic converting mills totalled 14,275 tons in 1936. This was 7,631 tons or 114 per cent greater than the 1935 figure of 6,644 tons. It exceeded 1934 sales of 3,191 tons by 11,084 tons or 347 per cent.

Groundwood pulp sales by domestic producers continued to show a decrease

Groundwood pulp sales by domestic producers continued to show a decrease in 1936, the tonnage sold being 18,568 tons, 1,940 tons or 9.4 per cent less than 1935 sales of 20,508 tons. The decrease from the 1934 sales of 21,486 was 2,918 tons or 13.6 per cent less.

PROPORTION OF UNITED STATES MARKET FOR PULP SUPPLIED BY AMERICAN PULP MILLS AND FOREIGN PULP MILLS*—1934-1935-1936

		Tons-2,000 L	bs.			
TOTALS By Grades.	Pulp Produced By U. S. Mills for Sale in Domestic Market—1934	Pulp Imported Into the United States 1934	Pulp Produced By U. S. Mills for Sale in Domestic Market—1935	Pulp Imported Into the United States 1935	Pulp Produced By U. S. Mills for Sale in Domestic Market—1936	Pulp Imported Into the United States 1936
Total-All Grades (Except Soda Pulp)	388,456	1,798,664	443,811	1,933,631	530,173	2,265,092
Total-Sulphite	361,229	977,773	412,631	1,122,448	494,325	1,298,888
Bleached Sulphite	282,738	398,142	328,460	429,423	391,252	512,168
Unbleached Sulphite	79,375	675,491	84,921	693,026	103,073	786,720
Total-Sulphate	4,382	481,435	8,207	611,342	15,852	738,097
Bleached Sulphate	1,191	54,068	1,563	84,658	1,577	102,375
Unbleached Sulphate	3,191	427,367	6,644	526,684	14,275	635,722
Total Miscellaneous, Damaged and	21,486	189,374	20,508	190,041	18,568	227,778
Off-Quality	1,865	153	2,110	394	2,008	329

^aTable prepared by Pacific Pulp & Paper Industry from United States Pulp Producers Association data on wood pulp production, shipments and stocks; and from import data supplied by the Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce. 1934 imports in this table have been changed to short tons for the purpose of comparison with American production figures.

530,173 (Short Tons)

DOMESTIC—18.72%

2,265,092 (Short Tons)

IMPORTED—81.28%

TOTAL 2,795,265 (Short Tons)

Total Pulp Purchased by American Paper Mills in 1936 (Except Soda Pulp)

Pulp, Paper and Board Production Breaks All Records in 1936

U. S. Industry Operated at Close to Capacity

BOTH production and consumption of pulp, paper and board attained new highs in 1936 with a further increase evident in the first half of 1937.

Practically all grades benefitted by the increased demand. It was a "come back" year for the pulp and paper industry in the United States and throughout the world. The situation changed from a buyer's to a seller's market with premiums being paid for quick deliveries.

Long in the making, the return to better than normal production and close to normal prices took a great many pro-ducers by surprise. During the several years of slack production and consumption they became accustomed to expect-ing nothing but the worst and conse-quently had not recognized the factors operating to bring the industry back to a strong and somewhat profitable condi-tion. To this group the spurt in demand was astounding. Many converting mills were caught without contracts for pulp supplies to take care of the increased business which came their way. As a rebusiness which came their way. As a result they went into the spot pulp market and bid up the price of pulp. Soon a world shortage in pulp became evident. Others anticipated the rise, protected themselves, whether buyers or sellers, and

today are in a stronger position than for

many years past.

As this is written, in May, 1937, the industry is hearing stories of various eastern and middle western converting mills who have had to shut down from one to six paper or board machines for lack of pulp, not for lack of orders.

Demand for all types of pulp, paper and board is so strong that the industry generally is worried. Some feel the strong

demand is but temporary and will raise prices beyond reasonable limits which will in turn cause a reaction. Others fear that the strong market will attract new capital and later on result in the over building of certain branches of the industry.

But the industry as a whole is trying to "make hay while the sun shines" and hope for the best in the future.

U. S. Pulp Production and Consumption

It is estimated by the United States Pulp Producers Association that this country consumed approximately 7,799,000 tons of wood pulp in 1936. Of this 000 tons of wood pulp in 1936. Of this total the Association estimates that United States mills produced 5,715,000 tons of pulp as compared with a production in 1935 of 4,944,226 tons, an increase of 770,774 tons or 15.6 per cent.

Imports in 1936 totalled 2,277,500 tons compared with 1,933,249 tons in 1935, an increase of 344,251 tons or 17.8 per cent.

The 1936 consumption of wood pulp in the United States of 7,799,000 tons was 1,009,235 tons more than the con-sumption in 1935 of 6,705,765 tons or an increase of 18 per cent.

According to the United States Pulp Producers Association data American pulp mills produced 1,150,000 tons of bleached sulphite pulp in 1936 as com-pared with 983,664 tons in 1935, an increase of 17 per cent.

Unbleached sulphite pulp production in 1936 amounted to 680,000 tons as against 611,084 tons in 1935, an increase of 11 per cent.

United States bleached sulphate pulp production in 1936 increased 23 per cent over 1935, 156,800 tons compared with 127,461 tons. Unbleached sulphate pulp production rose 24 per cent in 1936 with 1,660,200 tons compared with 1,340,288 tons in 1935.

Groundwood pulp tonnage produced in 1936 rose to 1,496,000 tons as against 1,340,819 tons in 1935, an increase of 10 per cent.

Soda and miscellaneous pulp production in 1936 totalled 572,000 tons compared with 525,910 tons in 1935, an increase of 8.7 per cent.

Second Consecutive Record Year

A new record for United States pulp production was established in 1935 over the previous record year of 1929 when the total production was 4,862,885 tons. The gain in 1935 amounted to 1.6 per cent or 81,341 tons more than was produced in 1929.

The new record output in 1936 exceeded that of 1929 by 852,115 tons or 17.5 per cent.

Expect New Record in 1937

In spite of rising prices the present existing shortage of wood pulp causes the industry to expect a sizable increase in United States wood pulp production dur-ing 1937 above the 1936 tonnage. Oliver M. Porter, secretary of the United States Pulp Producers Association, in a signed article published in February, 1937, said that domestic production of wood pulp

U. S. PAPER PRODUCTION-1933-1936*

(Tons of 2,000 lbs.)

	(10115 01 2,000 11	380 /		
	1933	1934	1935	1936
Total—All Grades	9,190,017	9,186,226	10,506,195	11,670,000
Newsprint	928,332	989,705	947,717	921,000
Book papers	1,080,196	1,055,247	1,281,870	1,407,000
Paperboard	4,076,290	4,073,309	4,722,890	5,233,000
Wrapping	1,440,029	1,357,438	1,605,457	1,784,000
Writing	478,356	414,542	541,803	568,000
Cover	12,697	17,011	20,806	24,000
Tissue	406,760	398,770	473,314	548,000
Absorbent	79,832	78,953	95,179	105,000
Building	328,275	327,866	463,143	540,000
All Other	359,250	473,385	354,736	540,000

^{*}Bureau of Census, U. S. Department of Commerce, Census of Manufacturers for 1933fi 1934 and 1935 data. 1936 estimates by the American Paper and Pulp Association and allied associations.

Y

lp th

X

ır-

ed

00

00

00

00

00

00

00

may reach 6,300,000 tons in 1937, which would be an increase of 585,000 tons or better than 10 per cent above the 1936 production of 5,715,000 tons.

Mr. Porter went on to say that about one million tons of domestic sulphate pulp capacity has been scheduled to begin production between January 1st, 1936, and December 31st, 1937. Of this total 275,590 tons of sulphate pulp capacity was added in 1936 and 808,480 tons capacity is projected for addition during 1937. This new sulphate pulp capacity is almost entirely in the Southern states.

It is also pointed out by Mr. Porter that, "After careful analysis of foreign and domestic conditions affecting pulp consumption in the United States, it seems probable that the 1937 volume of imports of wood pulp of all grades will not be much greater than that of 1936."

Sulphite Expansion

The United States sulphite pulp industry expanded its productive capacity some 80,600 tons in 1936 and projected expansions for 1937 total 130,200 tons. This will give the United States a total sulphite pulp productive capacity of 2,255,870 tons by the end of 1937 as compared with a productive capacity of 2,045,070 on January 1, 1936.

Mr. Porter points out that the domestic industry produced 1,830,000 tons of sulphite pulp in 1936 and probably will produce close to 2,000,000 tons in 1937.

U. S. Paper Production and Consumption

In paper and board as well as in pulp the United States industry attained new records in production and consumption during 1936.

Production of all grades of paper and board reached a total estimated by the Ameircan Paper & Pulp Association of 11,670,000 tons as compared with 10,506,195 tons in 1935. The 1935 production is from the Census of Manufactures for that year. The estimated 1936 production exceeded the actual 1935 production by 1,163,805 tons or 11 per cent.

Kraft wrapping and the board grades showed the greatest gains over 1935, but all grades exhibited increases with the exception of news print which declined more than 26,000 tons from the 1935 total.

Authorities estimate that the United States paper industry operated at about 82 per cent of capacity doring 1936.

Consomption of paper and board is estimated to have been 14,546,046 tons against 12,490,886 tons in 1935, an increase of 2,055,160 tons or 16.4 per cent.

Prices of all grades of paper and board advanced during 1936 forced by advancing costs of raw material and labor.

The paper board industry experienced a gain estimated at 17 per cent in production over 1935 maintaining its record of steady advancement in tonnage. Expanding markets for board in packaging contributed most of the increased tonnage orders.

Through the first and second quarters of 1937 the paper and board industries maintained their high levels of production pretty well, a large number of mills being oversold. The tightness of the pulp supply is indicative of the demand for paper and board and appears to insure a further increase in the 1937 production of paper and board over 1936.



Where Pacific Coast Mills Are Located

Locations of operating pulp, paper, board and roofing mills on the Pacific Coast of North America » » » The distance from Ocean Falls, B. C., to Los Angeles is over 2,000 miles.

TOTAL UNITED STATES PRODUCTION OF WOOD PULP

By Grades-1925-1936*

(Tons of 2000 pounds)

			ar or acce position	·			
Year.	Total	Unbleached Sulphite	Bleached Sulphite	Total Sulphate	Groundwood	Soda	All Other
1925	3,962,217	790,510	612,576	409,768	1,612,019	472,647	64,697
1926	4,394,766	911,729	646,466	519,960	1,764,248	496,920	55,463
1927	4,313,403	872,411	680,288	603,253	1,610,409	487,478	59,564
1928	4,510,800	836,751	722,107	774,225	1,610,988	488,641	78,088
1929	4,862,885	848,754	839,953	910,888	1,637,653	520,729	104,908
1930	4,630,308	815,897	751,166	949,513	1,560,221	474,230	79,281
1931	4,409,344	675,859	740,812	1,034,291	1,449,240	374,054	135,088
1932	3,760,267	548,702	596,937	1,028,846	1,203,044	290,703	92,035
1933	4,276,204	601,102	726,473	1,259,351	1,197,553	457,790	33,935
1934	4,281,428	599,905	806,612	1,240,967	1,253,398	477,089	35,457
1935	4,944,226	611,084	983,664	1,467,749	1,355,819	489,238	36,672
1936	5,715,000	680,000	1,150,000	1,817,000	1,496,000	531,960	40,040

*Source: From 1925 through 1933 and for 1935, U. S. Bureau of Census. 1934, 1936 data from United States Pulp Producers Association.



SUMMARY FOR 1936 OF UNITED STATES WOOD PULP PRODUCTION, SHIPMENTS and STOCKS*

Tons of 2,000 lbs., air dry weight.

			— Shipn Domestic	nents —	- Stocks on End of	
	Production	Used	Market	Export	Own Use	Market
Total All Grades (Except Soda) 19361	4,893,969	4,203,267	511,448	187,465	46,848	27,204
Total Sulphite	1,706,659	1,044,944	475,126	187,416	16,769	27,098
Total Bleached Sulphite	1,043,731	553,172	376,898	118,828	5,982	18,886
Total Unbleached Sulphite	662,928	491,772	98,228	68,588	10,787	8,212
Total Bleached Sulphate	144,743	142,757	1,577	0	1,314	0
Total Unbleached Sulphate	1,636,131	1,622,698	14,275	0	4,160	0
Total Groundwood	1,311,655	1,299,526	18,474	0	24,540	94
Total ² Damaged, Off-quality and Miscellaneous Grades		93,342	1,996	49	65	12

*Source: United States Pulp Producers Association.

1 As reported to the United States Pulp Producers Association by 162 mlls in the United States representing 95 per cent of the industry's productive capacity.

² Includes miscellaneous grades for which no classifications are shown.



UNITED STATES

Paper and Woodpulp Production and Consumption Consumption of Domestic and Imported Pulpwood and Total Pulpwood Consumption

	PA	PER	WOOL	OPULP	CONSUMI	TION OF PU	LPWOOD
Year-	Production (tons)	Consumption (tons)	Production (tons)	Consumption (tons)	Domestic (cords)	Imported (cords)	Total (cords)
899	2,167,593	2,158,000	1,179,525	1,216,254	1,617,093	369,217	1,986,31
904	3,106,696	3,049,824	1,921,768	2,091,006	2,477,099	573,618	3,050,71
1909	4,216,708	4,224,000	2,495,523	2,856,593	3,207,653	793,954	4,001,60
1914	5,270,047	5,496,164	2,893,150	3,556,377	3,641,063	829,700	4,470,76
917		6,255,725	3,509,939	4,148,600	4,706,327	773,748	5,480,07
1918		6,387,066	3,313,861	3,869,746	4,506,276	744,518	5,250,79
1919	6,190,361	6,479,490	3,517,952	4,113,911	4,445,817	1,032,015	5,477,83
1920	7,334,614	7,846,827	3,821,704	4,696,035	5,014,513	1,099,559	6,114,07
1921		6,053,915	2,875,601	3,544,218	3,740,406	816,773	4,557,17
1922		8,007,088	3,521,644	4,756,105	4,498,808	1,050,034	5,548,84
1923	8,029,482	9,339,573	3,788,672	5,149,695	4,636,789	1,236,081	5,872,87
924		.,,	3,723,266	5,216,265	4,720,191	1,047,891	5,768,08
1925		10,590,090	3,962,217	5,590,304.	5,005,445	1,088,376	6,093,82
1926		,,.,	4,394,766	6,096,279	5,489,517	1,276,490	6,766,00
1927		11,915,233	4,313,403	5,960,865	5,526,889	1,224,046	6,750,93
928		12,447,841	4,510,800	6,239,641	5,750,689	1,409,411	7,160,10
1929		13,347,925	4,862,885	6,704,341	6,411,566	1,233,445	7,645,01
1930	10,169,140	12,314,819	4,630,308	6,463,185	6,089,852	1,105,672	7,195,52
1931		11,403,850	4,409,344	6,005,718	5,896,446	826,320	6,722,76
1932		9,733,764	3,760,267	5,083,446	4,891,424	741,699	5,633,12
1933		10,919,391	4,293,344	6,027,088	5,933,295	628,379	6,561,67
1934		11,185,682	4,281,428	5,969,633	5.943.223	973,978	6,917,20
1935	10,506,195	12,490,886	4,944,226	6,877,869	6,590,942	1.037.332	7,628,27
1936		14,546,046	5,143,000	7,420,829	6,629,460	1,209,760	7,920,22

Source: Bureau of the Census, Federal Trade Commission, United States Forest Service and A.P. & P. A. Bureau Foreign and Domestic Commerce. Cords: 128 cubic feet.

*Pulpwood requirement is a computed figure which represents the pulpwood required to manufacture the total paper consumption of a year.

*Solventicity comparable with other data under same head. Refers to wood actually imported during the year, whereas other figures refer to imported wood actually consumed during year.

697

088 035

935 457 672

040

(S*

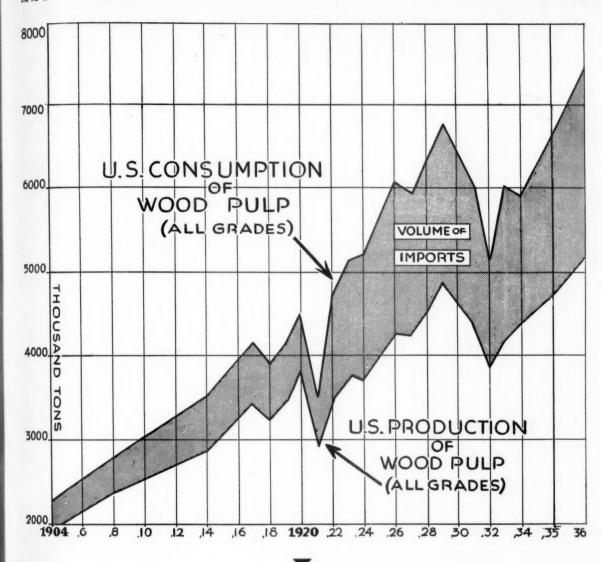
d ~ d rket ,204 ,098 ,886 ,212

12

pro-

DD (1971)

,674 ,201 3,274 0,220



ESTIMATED UNITED STATES CONSUMPTION OF WOODPULP

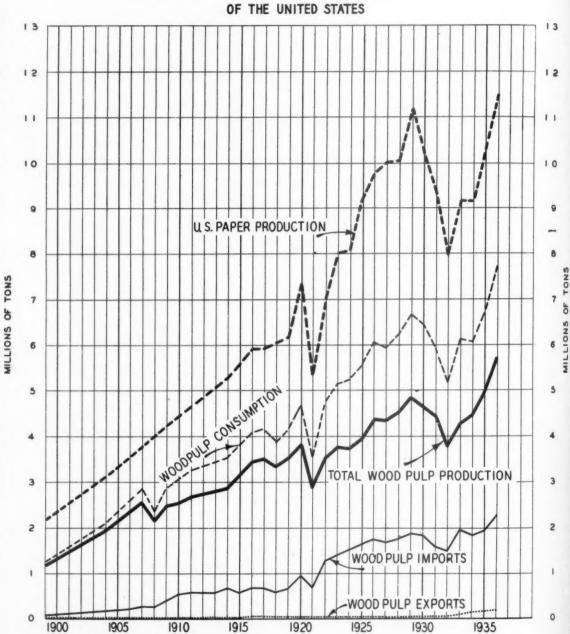
By Grades-1925-1936*

(Tons of 2000 pounds)

-						4	
Year.	Total	Unbleached Sulphite	Bleached Sulphite	Total Sulphate	Groundwood	Soda	All Other
1925	5,590,214	1,426,610	921,291	772,079	1,943,111	469,897	57,226
1926	6,095,279	1,603,433	964,952	913,024	2,068,007	495,127	50,736
1927	5,960,915	1,546,349	1,015,172	997,438	1,856,008	485,208	60,740
1928	6,239,814	1,541,817	1,054,512	1,217,573	1,860,187	485,907	79,818
1929	6,696,322	1,612,459	1,192,370	1,358,181	1,911,114	518,533	103,665
1930	6,414,760	1,543,265	1,095,312	1,371,847	1,859,453	474,369	70,514
1931	5,952,741	1,255,770	1,074,334	1,453,501	1,659,804	376,040	133,292
1932	5,194,367	1,094,831	922,381	1,402,954	1,391,509	291,224	91,468
1933	6,189,602	1,225,537	1,153,778	1,821,656	1,407,832		0,799
1934	5,969,633	1,217,097	1,148,891	1,776,471	1,442,772	301,552	82,850
1935	6,705,765	1,398,677	1,315,725	2,079,091	1,545,860	453.722	76,327
1936	7,799,015	1,398,677	1,542,640	2,555,097	1,723,778	495,472	83,351

^{*}Consumption: Production plus imports minus exports.

TOTAL WOOD PULP PRODUCTION. CONSUMPTION, IMPORTS AND EXPORTS AND TOTAL PAPER PRODUCTION



Sources-U.S. Bureau of the Census
U.S. Bureau of Foreign & Domestic Commerce
Paper Production 1924 1926, 1935 & 1936
estimated by A.P. & P.A
1936 Pulp data estimated by
U.S. Pulp Producers Association

UNITED STATES PULP PRODUCERS ASSOCIATION JANUARY 1957

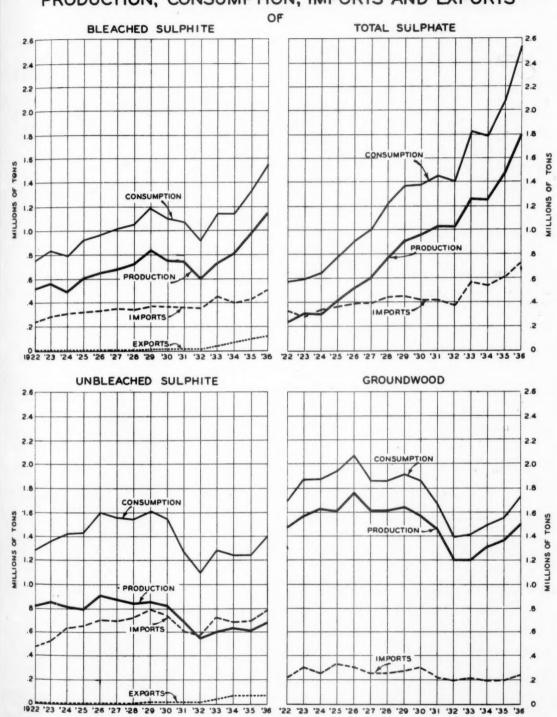
3

5

OF

MILLIONS

PRODUCTION, CONSUMPTION, IMPORTS AND EXPORTS



Sources: 1922-1935- U.S. Bureau of the Census and U.S. Bureau of Foreign & Domestic Commerce 1936-Estimated by U.S. Pulp Producers Association

UNITED STATES PULP PRODUCERS ASSOCIATION
JANUARY, 1937

News Print Production Rises

1936 Production 8% Above 1935

World news print production reached an all-time high to date in 1936 with 8,217,000 short tons, according to Mr. R. S. Kellogg, Secretary of the News Print Service Bureau. This was 589,000 tons or about 8 per cent greater than in 1935 when 7,628,000 tons or some 11 per cent higher than in 1934 when 7,342,000 tons was produced. Prior to these years, 1929 held the record with an output of 7,319,000 tons. Yearly figures from 1927 to 1936 for all countries are shown in the attached table tries are shown in the attached table which is based upon data received direct by the News Print Service Bureau, information from foreign correspondents and reports to the Department of Commerce in Washington.

Canada made 39 per cent of the world Canada made 39 per cent of the world production of news print last year, Great Britain 12 per cent and the United States 11 per cent. Germany furnished 6 per cent, Finland and Japan each 5 per cent, France and Newfoundland each 4 per cent, Sweden and Russia each 3 per cent with lesser amounts from other

countries.

For the first time in history, Canada's production passed the three million ton figure, the Dominion manufacturing 3,192,000 tons of news print in 1936, which was 439,000 tons more than the output in 1935 and 539,000 tons more than in 1934.

Another first was attained by Great Britain when her production went be-yond one million tons of news print last year. This exceeded by 34,000 tons her output in 1935 and by 64,000 tons that

The United States production of 921,-000 tons, while 9,000 tons higher than the output in 1935, was 36,000 tons less than in 1934 and over three-quarter mil-lion tons-763,000-less than in 1926 when United States production reached its peak of 1,684,000 tons.

Germany retained fourth place, manu-

facturing 525,000 tons of news print last year, which was 61,000 tons more than in 1935, but still about 100,000 tons less than her previous high mark of 623,000 tons in 1929.

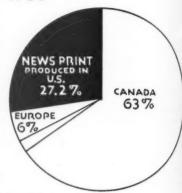
Finland, by producing 402,000 tons of news print in 1936, climbed to fifth place in world production, passing Japan, France and Newfoundland. Finland has maintained an unbroken record of increase in production over the ten years covered in the tabulation.

Japan showed an increase over 1935 of 16,000 tone of 16,000 tons with a production of 384,000 tons of news print paper.

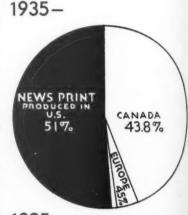
384,000 tons of news print paper.
French news print output dropped slightly during 1936 with a total of 331,000 tons. This was 27,000 tons less than in 1935, the previous peak year. Newfoundland also produced slightly less than in 1935—the high mark—with 328,000 tons manufactured in 1936, which was 8,000 tons below the 1935 figure. This was due to an accident at one mill which slowed down production. figure. This was due to an accusent at one mill which slowed down production for a time. Sweden, too, had a smaller output for 1936 with 282,000 tons. This was 16,000 tons less than the 1935 fig. ure of 298,000 tons when Sweden made her high record. Russia held tenth place with a production of 217,000 tons, an increase of 24,000 tons over 1935. Norway followed Russia in rank with a total of 200,000 tons, a gain of 18,000 tons over 1935.

Austria, Belgium and Czechoslovakia showed slight increases over 1935 pro-duction figures, while The Netherlands, Italy, Switzerland, Poland and Spain lost ground in 1936 No reports were received from Spain, struck by Civil War. The estimate of 18,000 tons of news print made in 1936, compares with 42,000 tons in both 1935 and 1934. Mexico, because of domestic difficulties, had no production of news print paper during 1936. Chile, Latvia and Estonia had slight increases over 1935, while Denmark produced no news print last





C





1915 -

U. S. News Print Production Drops 45% in Twenty Years

The graphs at the right, which represent the total news print consumption in the United States for the years indicated, show clearly the decline in twenty-one years of the United States producer's share of the domestic market, together with the present dependence upon imports for over 75 per cent of the news print consumed in this country.

While it is generally conceded that news print production by Northern United States mills will continue to decline due to greater profit possibilities in higher grades, the decrease in American production may be arrested by new production in the Southern states, if the first mill, now planned, indicates the feasibility of volume production.

NEWS PRINT IN THE UNITED STATES, 1913-1936

Compiled from News Print Service Bureau Data

		(Tons)		
		4	_	Balance
Year	Production	Imports	Exports	at Home
1913		220,000	43,000	1,482,000
1914		315,000	61,000	1,567,000
1915	1,239,000	368,000	55,000	1,552,000
1916	1,315,000	468,000	76,000	1,707,000
1917	1,359,000	559,000	94.000	1,824,000
1918	1,260,000	596,000	97,000	1,759,000
1919	1,375,000	628,000	111,000	1,895,000
1920	1,512,000	730,000	49,000	2,193,000
1921	1,225,000	792,000	17,000	2,000,000
1922	1,448,000	1,029,000	26,000	2,451,000
1923	1,485,000	1,309,000	16,000	2,778,000
1924	1,481,000	1,357,000	17,000	2,821,000
1925	1,530,000	1,448,000	23,000	2,955,000
1926	1,684,000	1,851,000	19,000	3,517,000
1927	1,486,000	1,984,000	12,000	3,461,000
1928	1,418,000	2,157,000	11,000	3,564,000
1929	1,392,000	2,421,000	19,000	3,796,000
1930	1,282,000	2,280,000	10,000	3,551,000
1931	1,157,000	2,067,000	10,000	3,212,000
1932	1,009,000	1,791,000	8,000	2,792,000
1933	946,000	1,793,000	11,000	2,728,000
1934	957,000	2,210,000	23,000	3,144,000
1935	912,000	2,383,000	23,000	3,272,000
1936	921,000	2,752,000	15,000	3,658,000

British News Print Consumption in 1936

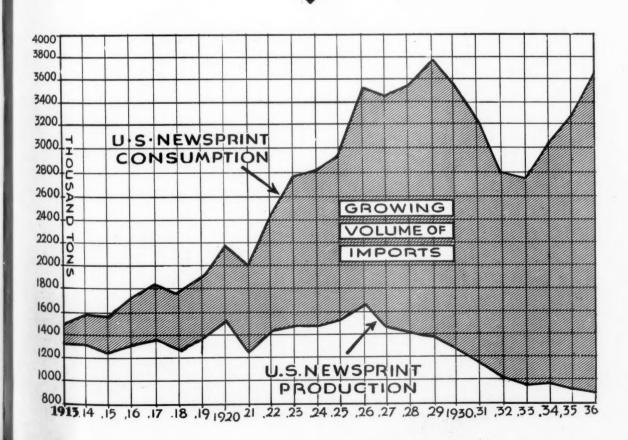
Production of newsprint in the United Kingdom during 1936 is estimated to have reached 896,069 tons (British ton of 2,240 pounds). Imports during the same period reached a total of 411,164 tons and exports a total of 76,948 tons, leaving 1,230,285 tons available for domestic consumption. Canada and Newfoundland together supplied nearly 75 per cent of the imports, the remainder coming chiefly from Finland. Nearly 80 per cent of the exports went to Australia and the remaining 20 per cent to other overseas dominions. (Assistant Commercial Attache James Somerville, London.)

Production In First Quarter of 1937

Production in Canada during March, 1937, amounted to 301,110 tons and shipments to 290,453 tons, according to the News Print Service Bureau. Production in the United States was 82,576 tons and shipments 79,570 tons, making a total United States and Canadian news print production of 383,686 tons and shipments of 370,023 tons. During March 30,620 tons of news print were made in Newfoundland, so that the total North American production for the month amounted to 414,306 tons. Total production in March, 1936, was 344,320 tons.

The Canadian mills produced 170,677 tons more in the first three months of 1937 than in the first three months of 1936, which was an increase of twenty-four and six-tenths per cent. The output in the United States was 5,925 tons or two and six-tenths per cent more than in the first three months of 1936, and in Newfoundland 13,987 tons or eighteen and eight-tenths per cent more, making a total increase of 190,589 tons, or nine-teen and one-tenth per cent.

Stocks of news print paper at Canadian mills were reported at 84,902 tons at the end of March and 19,001 tons at United States mills, making a combined total of 103,903 tons compared with 90,240 tons on February 28, 1937. Considerable tonnage was accumulated at points from which water shipments will be made upon the opening of navigation.



PULP AND PAPER CAPACITIES OF PACIFIC COAST MILLS Showing principal grades manufactured and capacities in tons per 24-hour day

			-		-					* * * * *			
Name of Mill	Location	Mechanical	Unbleached Sulphite	Bleached Sulphire Unbleached	Sulphate	Sulphate	abo2	News	Sulphites	Sulphates	Book	Board	Others
BRITISH COLUMBIA British Columbia Pulp & Paper Co.	Woodfibre			150				1.5					New bleach plant will permit bleaching of entire output by November
British Columbia Pulp & Paper Co.	Swanson Bay		(40)										Mill Idle.
Canadian Forest Products, Ltd.	Beaver Cove			150	(40)	-			-			11	Produce some Rayon grades.
Pacific Mills, Ltd.	Ocean Falls	200	65		105			230	20	85			News, Kraft and Sulphite Wrapping, fruit wrap, tissues, etc.
Powell River Co., Ltd.	Powell River	200	210					650	1			36	Newsprint and unbleached sulphite
Vancouver Kraft Mills, Ltd. Westminster Paner Mills, Ltd.	Port Mellon	2			85				35			1	Resumed operations in January, 1937. Kraft and sulphite wrapping; second
WASHINGTON Berkheimer Mfg. Co I. E.	Tacoma								ì				sheets; fruit wraps; ussues; specialities. Raz roofing. etc.
Columbia River Paper Mills	Vancouver	30		110					80				
Crown Willamette Paper Co.	Camas	06	250	100	150	-1-1	-		225	150	-	-	Sulphire, sulphare and groundwood specialties, tissue, M. F. book, etc.
Everett Pulp & Paper Co.	Everett		1		-	. 1	09				69	-	Book, railroad, writing, school supplies,
Everett Pulp & Paper Co.	West Tacoma	***************************************	-	1	-	-	-		-	-	32	1	Resumed operations in June, 1937. Products same as Everett mill.
Fibreboard Products, Inc. Fibreboard Products. Inc.	Port Angeles	30	72		-		***					100	White patent coated board, bottle cap bd.
Grays Harbor Corporation	Hoquiam								20		1		Sulphite bonds, writing, specialties.
Grays Harbor Pulp & Paper Co.	Hoquiam	00		270	1	-		,		-	3-1-	-	Rayon and paper grades.
Longview Fibre Co.	Longview	001	23		160	4-	-	60	20	75	-	200	ties, etc.
National Paper Products Co.	Port Townsend			-	- 1	- 1			C	235			Kraft liner board, wrapping, bag paper.
Olympic Forest Products Co.	Port Angeles	-	-	250				-	-	-	1	1	
Pacific Coast Paper Mills	Bellingham	30	-		-	-			12	-	1	5.5	Toilet Tissues, Towels, etc.
Rainier Pulp & Paper Co.	Shelton	000		310			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			-		77	All Rayon grade, includes 125 tons
Soundview Pulp Co.	Everett			450		-							by Shaffer Pulp
Puget Sound Pulp & Timber Co.,			0							-			
Puget Sound Pulp & Timber Co	Anacortes		90		-	1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	E			-		
San Juan Division	Bellingham		110		-	1			***************************************	-		-	Entire output sold to Rainier Pulp &
Shaffer Pulp Co.1	Tacoma		125	-	1.	-	-			-		-	Shelton. Bleach plant capacity suf-
St. Regis Kraft Co.	Tacoma	1007		-	180	++	-		100	-	1	-	ficient to fully bleach entire produc-
Washington Pulp & Paper Corporation	Port Angeles	300	65		1 1			340	(06)				Mill idle.
Weyerhaeuser Timber Co.	Longview			210		-	-		-	-	-	-	

MAY	19

230 210

Weyerhaquser Timber Co.

Weyerhaquser Timber Co.

	392	195	100 1195	720	815	1725	09	. 3 5	55	30 10	2065 1477 2130 1055	55 14	20		Total daily capacities
Insulating board from bagasse. (300,000 sq. ft. ½ in. thick per day).								-			-1.		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Hilo	Hawaiian Cane Products Co.
	28							-		1			1	Olaa	HAWAII Olaa Sugar Company
Box, liner, chip boards, wall boards, etc.		20									8 8 8 8 8	- 5		Denver	COLORADO Central Fibre Products Co. Successors to Colorado Pulp & Paper Co.
News lined chip board and roofing felts.	25	25	-				=	-	-	-	-			Los Angeles	U. S. Gypsum Co.
	70	06	1	T									8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Los Angeles	Pioneer Division, Flintkote Company
R	100	1 1	\$ 1 1 2 2 3 4 4 5 7					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				1 1		Los Angeles Emeryville	Los Angeles Paper Manufacturing Co Paraffine Cos., Inc.
-	30							1 1		11				Compton	Lloyd A. Fry Roofing Co. Johns-Manville Corporation
Container board, tag, white patent coat- ed, folding and set-up corrugated straw.		200								2 m m	-	-	E	(Sunset Div.) Antioch	Fibreboard Products
Binder board and miscellaneous board.		00												Los Angeles	Fibreboard Products
Boves carrons cardboard specialties.		250												(Vernon Div.)	Fibrehoard Deaduate
Box board, container, patent coated		120						1		-		E E E E E E E E E E E E E E E E E E E		Floriston	Crown Williamette Faper Co.
Č				-			==							Memmons	ממות דיסותים ביילייייייייייייייייייייייייייייייייי
Roofing, felts, mulching and insulating	38	-	-	-				-	- 1	- 1		- 1		Richmond	Certain-teed Products Corp.
Wrapping, fruit wrap, vegetable parch- ment, tissues.				40	40				-	2	-	-		Los Angeles	California-Oregon Paper Mills
Fruit wraps, wrapping, tissues, napkins,					35			1	1					Pomona	CALIFORNIA California Fruit Wrapping Mills
									* *		80	1 1		Empire Newberg	Coos Bay Pulp Corporation Spaulding Pulp & Paper Co.
Kraft wrapping, bag, fruit wraps, towels,	1	# E E E E E E E E E E E E E E E E E E E	-	135	-	-	===		125 ‡	_	707	-		St. Helens	St. Helens Pulp & Paper Co.
Sulphite Bonds, Glassine, Greaseproof.	1 1 2 1 1				120			-	1	130	-	1		Salem	Pulp & Paper Co.
News, Sulphite Wrapping, Lightweight Papers, Tissue, Cover, etc.					06	140		-	-	-	85	170	1	Oregon City	Hawley Pulp & Paper Co
Wood nbre insulating board. Daily capacity 250,000 sq. ft.	*				6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6				-	-		-		St. Helens	Fir-Tex Insulating Board Co.
	45			Ī	25	300			-	-	100	1 044	4	West Linn	Crown Willamette Paper Co
News. Wranning. Poster. Sulphire sne.			1	1	1		==	-	-	-	-	09		Oregon City	Crown Willamette Paper Co.
Wrapping, cartridge, powder, printed wrapping and semi-parchmentized wrappings.	1		1		40				-	-	37		1	Lebanon	Crown Willamette Paper Co.

Total Pulp Capacity—All Grades... Total Paper Capacity—All Grades...

*Totals do not include 250,000 sq. ft. of insulating board.

Total Pacific Canadian Capacity—Pulp, 1,475 tons; Paper, 1,035 tons.

Total Pacific United States Capacity—Pulp, 5,132 tons; Paper, 3,912 tons.

Shaffer Pulp Company production not included in unblesched sulphite total.

\$Production of Bleached and Semi-Bleached Sulphate is variable.

49

4,947

Pulp and Paper Imports Attain New Highs in 1936

IMPORTS of pulp, paper, paper products and paper base stocks, all increased materially in 1936 over the imports during 1935 due to the expanding demand for these products in the United States and the inability of domestic producers to supply a larger share

of the new demand.

Wood pulp imports of all grades rose 17.8 per cent over 1935 to a new record for the second consecutive year, 2,277,829 short tons valued at \$82,881,000. This compares with 1935 total imports of 1,933,643 short tons valued at \$70,760,951. The tonnage increase in 1936 was 344,186 tons. Value increased \$12,130,049 or 17.1 per cent over 1935.

130,049 or 17.1 per cent over 1935.

Comparison of the record 1936 wood pulp imports show a remarkable advance of 26.1 per cent in tonnage, 471,-701 tons, over pulp tonnage imported in 1934. Even more impressive is the rise in the value of 1936 pulp imports being 34 per cent or \$21,040,731 over the value in 1934 of \$61,850,269.

For the first time wood pulp imports reached and passed the two million ton mark in 1936. However, the value of the 1936 imports was surpassed by three previous year's imports, 1926 imports holding record with a value of \$91,487,071, or \$8,596,071 more than the 1936 value. The 1936 imports were 9.3 per cent less than the value of the 1926 imports.

Chemical Pulp Imports

Chemical pulp imports in 1936 totalled 2,050,051 short tons valued at \$78,839,776, an increase of 306,449 tons or 17.5 per cent over the 1935 chemical wood pulp imports. This was the first year in which chemical pulp imports passed the two million ton mark. In value the 1936 imports exceeded the value of the 1935 imports, \$67,483,566, by \$11,356,210 or 16.8 per cent.

On the other hand imports of chemical wood pulp in 1935 exceeded those of 1934 in tonnage by 124,848 short tons or 7.8 per cent. The value of the 1,616,754 tons of chemical wood pulp

imported in 1934, \$58,605,219 was exceeded by the chemical pulp imports in

1936 by \$20,234,557 or 35.4 per cent.

Although the tonnage of the 1936 chemical wood pulp imports was the largest of any year, the value was exceeded by the imports of 1926, 1927 and 1929. The value of the 1926 chemical imports was \$83,208,851, \$4,369,075 more than the value of the 1936 chemical pulp imports. The 1936 imports were 5.2 per cent lower in value.

Bleached sulphate pulp exhibited the greatest increase in import tonnage of the chemical grades with a rise of 20.9 per cent over the 1935 imports. Unbleached sulphate imports showed the same gain, 20.7 per cent over 1935 as 1935 had shown over 1934. The increase in bleached sulphite imports was almost the same in 1936 over 1935 as 1935 had shown over 1934, 19.2 per cent. Unbleached sulphate imports expanded 13.5 per cent over 1935, while the 1935 imports were 17,535 tons or 2.5 per cent above 1934.

Bleached Sulphite Imports

Bleached sulphite imports established a new record in 1936 with 512,168 short tons, valued at \$25,824,769, increasing 82,744 tons or 19.2 per cent in tonnage, and \$3,890,615, or 17.7 per cent in value over the 429,424 short tons valued at \$21,934,154 imported in 1935.

over the 429,424 short tons valued at \$21,934,154 imported in 1935.

The previous record importation of bleached sulphite was in 1935 when the tonnage was 448,708. The 1936 importations exceeded the 1933 volume by 63,460 tons. The former high value for bleached sulphite pulp imports was in 1929, \$25,338,603.

The average value per short ton of the bleached sulphite imported in 1936 was \$50.42 compared with an average value of \$51.07 in 1935 and \$48.76 in 1934.

Unbleached Sulphite Imports

The imports of 786,720 short tons of unbleached sulphite, valued at \$26,778,644 in 1936 were 93,694 tons or 13.5

per cent greater in volume than the 693,026 tons valued at \$24,026,390 imported in 1935, and the value in 1936 was 11.4 per cent higher.

\$4 ue

Unbleached sulphite established a new tonnage record, exceeding the 1929 record by 1,090 tons. The value of the 1936 imports of unbleached sulphite has been exceeded in six of the past fifteen years. The average value of imported unbleached sulphite in 1936 was \$34.03 per short ton. In 1935 the value was \$34.66 and in 1934 \$32.26.

Unbleached Sulphate Imports

Imports of unbleached kraft pulp in 1936 set a new tonnage record with 635, 722 tons, 20.7 per cent or 109,038 tons greater than the 1935 import tonnage of 526,684 tons. The value of the 1936 imports, \$19,771,988 was \$3,878,295 or 24.4 per cent greater than the 1935 value of \$15,893,593. While the tonnage of unbleached sulphate pulp imported in 1936 was greater than in any previous year, the value was under that of three other years, 1926 to 1929 inclusive.

Average value of the unbleached kraft pulp imported in 1926 was \$31.10 per short ton. In 1935 the average value was \$30.17 and in 1934 \$28.31.

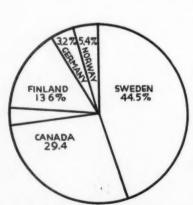
Bleached Sulphate Imports

The importations of bleached sulphate pulp in 1936 amounted to \$102,375 short tons valued at \$5,844,031. This represented an increase in tonnage of 20.9 per cent over the 1935 imports of 84,658 tons, and an increase in value of 12.5 per cent over the \$5,193,789 value of the 1935 imports. Average value dropped in 1936 to \$57.08 per ton from \$61.35 per ton in 1935.

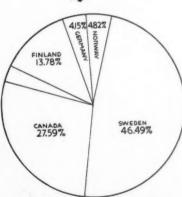
Soda Pulp Imports

Soda pulp imports in 1936 amounted to 12,737 tons valued at \$565,572, compared with 9,416 tons valued at \$409,636.

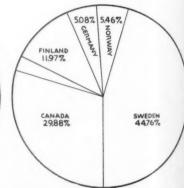
Miscellaneous wood pulp imported in 1936 totalled but 329 short tons valued at \$54,772 as compared with 394 tons valued at \$26,020 in 1935.



96% of 1936 U. S. Pulp Imports



97% of 1935 U. S. Pulp Imports From Five Countries



97% of 1934 U. S. Pulp Imports From Five Countries

Y

im-936 new

has

een

un-

per

ts

35,-

ons of 936 OF lue of in ous ree

raft

per

nate

375 his of of of

op-

in ued

Groundwood Imports

Mechanical wood pulp imports in 1936 totalled 227,778 short tons, valued at \$4,051,224 as against 190,041 tons, valued at \$3,277,385 in 1935. The 1936 increase was 37,737 tons or 19.8 per cent in tonnage, and \$773,839 or 23.6 per resistant of the statement of t

cent in value.

While the tonnage of groundwood
pulp imported in 1936 surpassed any
year since 1930 it was below the record
of 331,092 short tons imported in 1925,
being 103,314 tons or 31.2 per cent less.
Although the value of the groundwood mports in 1936 exceeded any year since 1931 it was far below the period from 1923 to 1926 inclusive when the average was better than eight million dollars per

year.
The average value of the groundwood inports in 1936, both bleached and unbleached, was \$17.78 per air dry short ton. The average for 1935 was \$17.24 and in 1934, \$17.13.

Division of Imports By Countries

Sweden, as for many years in the past, was again in 1936 the leading source of wood pulp imports into the United States with 1,014,809 short tons of the total imports of 2,277,829 tons or 44.5 per cent. Sweden's share of the American wood pulp market dropped 1 per cent from 1935 and 1.25 per cent from her 1934 share. her 1934 share.

Canada was again second as a source of supply with 670,962 short tons or 29.4 per cent of the total pulp imported. This was an increase of 1.8 per cent over the Canadian share in 1935, but a drop .5 per cent from the 29.88 per cent of the 1934 imports.

From Finland came 310,919 tons during 1936, 13.6 per cent of all wood pulp imported into the United States, a drop of .18 per cent from Finland's 1935 share, but an increase of 1.63 per cent over her 1934 portion of the purchasers

by American converting mills.

Norway supplied 125,246 short tons or 5.4 per cent of the total in 1936 as compared with 4.82 per cent in 1935 and 5.46 per cent in 1934.

Germany's share of the American market has dropped from 5.08 per cent in 1934 to 4.15 per cent in 1935 and to 3.2 per cent in 1936 when the total tonnage amounted to 74,663 short tons.

From Sweden

The 1,014,809 short tons imported The 1,014,809 short tons imported from Sweden in 1936 was valued at \$34,-199,656. The tonnage gain over 1935 was 115,934 tons or 12.8 per cent, when the tonnage was 898,875 and the value \$30,200,898.

\$30,200,898.
Chemical pulp imports from Sweden in 1936 were 992,435 tons, valued at \$33,820,806, as compared with 876,473 tons, valued at \$29,829,144 in 1935.
Ground wood imports from Sweden in 1936 totalled 22,374 tons of a value of \$378,850 compared with 22,402 tons value.

\$378,850 compared with 22,402 tons val-

\$178,850 compared with 22,402 tons valued at \$371,754 in 1935.

Sweden supplied the United States with 425,753 short tons of unbleached sulphite in 1936 valued at \$14,492,654.

Bleached sulphite imports totalled 67,300 tons valued at \$3,011,668.

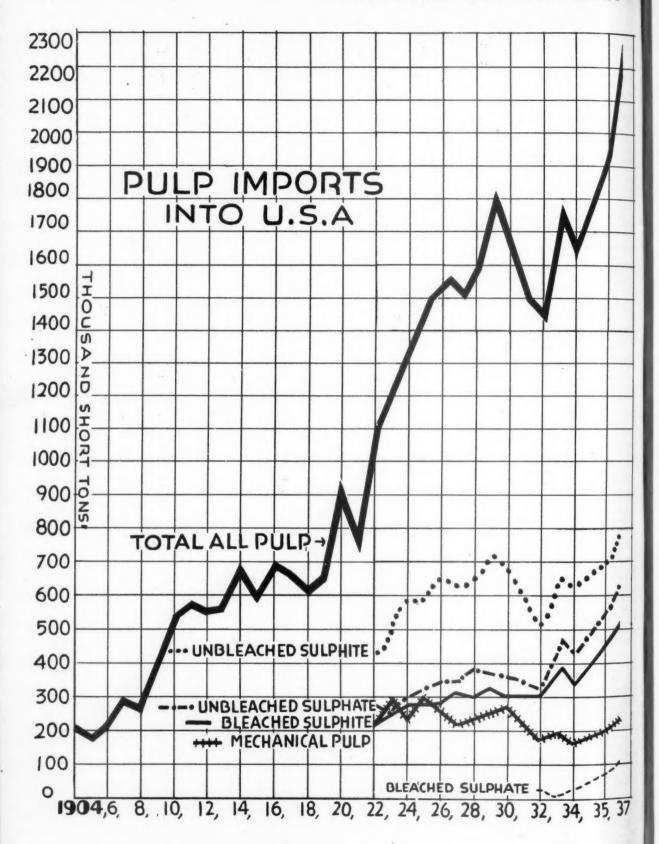
Kraft puls imports from Sweden rose

Kraft pulp imports from Sweden rose in 1936 above the 1935 total. Unobtached kraft imports from Sweden to-talled 457,912 tons, valued at \$14,005,-839 in 1936, compared with 400,654 tons of a value of \$12,058,365 in 1935. Bleached sulphate imports rose in 1936

UNITED STATES

Wood Pulp Imports by Grades and Countries of Origin-1936 SHORT TONS

Grade—	Canada	COUNTRY Finland	COUNTRY OF ORIGIN Finland Germany	Norway	Sweden	Others	Total by Grades
Mechanical Wood Pulp-Total	170,344	29,699		8,371	22,374		227,778
Unbleached Bleached	170,344	24,719 4,980		3,010 5,361	8,771 13,603		
Sulphite—Total	370,421	188,455	74,663	96,341	493,062	75,946	1,298,888
Unbleached Bleached	89,359 281,062	157,324 31,131	39,871 34,792	25,391 70,950	425,753 67,309	49,022 26,924	786,720 512,168
Sulphite-Total	117,460	92,765		23,544	499,373	4,955	738,097
UnbleachedBleached	62,216 55,244	87,325 5,440		23,314 230	457,912 41,461	4,955	635,722 102,375
All Others	12,737						
Total (By Countries)	670,962	310,919	74,663	125,246	1,014,809	81,230	2,277,829
Value	\$27,099,612 \$10,461,361	\$10,461,361	\$2,881,857	\$5,240,935	\$34,199,656	\$2,997,579	\$82,881,000



to 41,461 tons valued at \$2,310,645, compared with 29,262 tons valued at \$1,605,916 in 1935.

From Canada

Imports from Canada in 1936 reached a total of 670,962 short tons of all grades, valued at \$27,099,612. Tonnage was 138,804 tons or 26 per cent over 532,158 tons of all grades in 1935 valued at \$22,444,200.

Chemical pulp imports amounted to 500,618 tons in 1936, valued at \$24,169,-147 as compared with 396,046 tons valued at \$20,083,817 in 1935. Groundwood imports in 1936 from Canada totalled 170,344 tons of a value of \$2,930,-465 as compared with 136,112 tons valued at \$2,360,383 in 1935.

Unbleached sulphite pulp imported from Canada in 1936 amounted to 89,359 tons valued at \$2,934,325, compared with 67,404 tons of a value of \$2,300,488 in 1935. Bleached sulphite imports from Canada in 1936 were 281,062 tons valued at \$15,295,458 against 225,773 tons of a value of \$12,532,251 in 1935.

Unbleached kraft pulp imports from Canada totalled 62,216 valued at \$2,079,726 compared with 43,549 tons of a value of \$1,472,336 in 1935. Bleached kraft pulp amounted to 55,244 tons valued at

\$3,294,067 compared with 51,199 tons valued at \$3,424,897 in 1935. Soda pulp imports from Canada in 1936 totalled 12,737 tons of a value of \$565,571, compared with 7,985 tons valued at \$347,280 in 1935.

From Finland

Imports of wood pulp from Finland in the past year totalled 310,919 short tons of all grades with a value of \$10,421,361, which was an increase in tonnage of 16.6 per cent or 44,427 tons over the 266,492 tons valued at \$8,890,747 in 1935.

Of the total imports, chemical wood pulp accounted for 281,220 tons valued at \$9,880,417 in 1936, while in 1935 242,002 tons were imported, valued at \$8,461,842.

Groundwood imports from Finland in 1936 were 29,699 short tons valued at \$532,944 against 24,490 tons valued at \$428,905 in 1935.

Unbleached sulphite pulp imported from Finland last year amounted to 157, 324 tons valued at \$5,441,726, while in 1935 146,166 tons valued at \$5,190,491 were imported. Bleached sulphite from Finland totalled 31,131 tons of a value of \$1,431,315 as compared with 29,550 tons valued at \$1,344,911 in 1935.

Unbleahced sulphate from Finland in 1936 totalled 87,325 tons valued at \$2,789,362. In 1935 the tonnage was 62,173 tons valued at \$1,766,856. Bleached sulphate was but 5,440 tons in 1936 valued at \$266,014 as compared with 4,113 tons valued at \$159,584 in 1935.

From Norway

Imports in 1936 from Norway accounted for 125,246 short tons of all grades valued at \$5,250,935. In 1935 the imports were 93,304 tons valued at \$3,837,380. The gain in tonnage was 31,942 or 34.2 per cent over 1935. Chemical pulp imports from Norway in 1936 totalled 119,885 tons with a value of \$5,131,970 as compared with 86,298 tons valued at \$3,721,900 in 1935. Groundwood imports in 1936 were 5,361 tons valued at \$118,965 as compared with 7,006 tons valued at \$115,480 in 1935.

Unbleached sulphite from Norway in 1936 accounted for 25,391 tons valued at \$946,761 as compared with 16,539 tons valued at \$588,316 in 1935. Bleached sulphite totalled 70,950 tons valued at \$3,383,696 in 1936 as against 52,407 tons valued at \$2,589,939 in 1935.

Unbleached kraft from Norway in 1936 totalled 23,314 tons valued at \$788,-

U. S. WOOD PULP IMPORTS

Quantity and Value

1922-1936

		ed Sulphite		hed Sulphite		hed Sulphate	Bleached	
	Long Tons	Value	Long Tons	Value	Long Tons	Value	Long Tons	Value
1936	465,607	\$25,824,769	715,128	\$26,778,644	568,827	\$19,771,988	93,059	\$5,844,03
1935	383,475	21,934,054	618,872	24,026,340	470,329	15,893,593	75,600	5,193,789
1934	355,484	19,415,304	603,117	21,791,584	429,853	13,733,776	48,275	3,334,713
1933	400,633	19,138,468	643,003	19,946,124	461,890	12,568,367	36,622	2,361,882
1932	311,046	14,727,214	508,088	17,047,669	310,659	9,818,674	23,366	1,975,720
1931	319,518	18,887,719	540,478	23,033,069	344,612	12,035,030	29,683	2,267,090
1930	322,886	22,721,929	665,049	33,193,598	357,551	16,452,381	19,533	1,468,599
1929	334,235	25,338,603	701,456	35,328,982	384,005	20,518,676	15,364	1,139,820
1928	307,771	23,268,421	640,660	32,587,134	381,256	21,170,948	14,590	894,587
1927	311,130	24,224,626	613,856	23,262,845	341,162	20,684,298	10,789	708,712
1926	294,818	23,677,929	628,923	37,032,470	334,803	21,193,459	16,147	1,048,662
1925	286,976	22,527,879	579,284	31,542,079	306,073	18,257,446	17,419	989,933
1924	272,370	21,006,429	562,020	30,092,530	277,994	15,904,350	27,613	1,549,629
1923	250,580	22,245,868	461,853	26,548,431	233,696	15,228,747	15,422	1,080,961
1922	213,093	17,996,401	422,700	22,297,283	275,504	16,085,121	19,440	1,169,570

	Total, All	Total, All Chemical Pulp		nical Pulp	Total, All Grades Wood Pulp		
	Long Tons	Value	Long Tons	Value	Long Tons		
1936	1,842,621	\$78,839,776	207,050	\$4,051,224	2,070,547	\$82,891,000	
1935	1,557,026	67,403,602	169,707	3,277,385	1,726,732	70,680,987	
1934	1,443,351	58,605,219	169,084	3,245,050	1,612,615	61,850,269	
1933	1,545,994	54,184,091	187,750	3,214,919	1,733,744	57,399,010	
1932	1,154,907	43,652,916	168,272	3,268,457	1,323,179	46,921,373	
1931	1,237,600	56,409,638	188,086	4,498,022	1,425,686	60,907,660	
1930	1,369,327	74,140,504	267,193	7,146,290	1,636,520	81,286,794	
1929	1,441,110	82,840,220	244,162	6,245,776	1,785,272	89,085,996	
1928	1,351,005	78,476,280	222,499	5,443,495	1,573,504	83,919,775	
1927	1,280,285	80,124,449	219,285	5,961,821	1,499,570	86,086,270	
1920	1,278,548	83,208,851	271,213	8,278,220	1,549,761	91,487,071	
1925	1,191,875	73,469,063	295,618	8,517,116	1,487,493	81,986,179	
1924	1,142,123	68,678,210	219,571	7,190,129	1,361,694	75,868,339	
1923	967,869	65,495,800	267,527	9,280,863	1,235,396	74,776,663	
1922	931,992	57,600,844	192,688	5,706,529	1,124,680	63,307,373	

UNITED STATES

Imports of Bleached Sulphite From 1920 to 1936

By Countries of Origin

(Long Tons of 2,240 Pounds)

Countries—	Canada	Sweden	Germany	Norway	Finland	All Others	Total
1920	86,055	6,788	200	13,435	5,329	2,663	114,470
1921	59,198	5,770	1,335	8,180	7,591	2,931	85,005
1922	122,347	39,340	3,152	39,153	5,393	3,708	213,093
1923	132,138	41,958	12,655	46,849	12,063	4,917	250,580
1924	135,943	64,221	17,054	35,279	6,960	12,912	272,369
1925	137,598	71,577	16,662	48,111	4,130	8,898	286,976
1926	152,764	58,623	25,944	45,416	2,739	9,332	294,818
1927	171,280	46,369	25,341	49,928	4,595	13,617	311,138
1928	176,807	36,237	39,592	40,212	1,500	13,578	307,926
1929	187,469	47,199	45,471	39,312	7,306	7,478	334,235
1930	181,195	43,916	46,101	36,758	7,335	7,358	322,693
1931	185,037	49,063	47,155	18,011	8,922	7,923	316,111
1932	150,589	46,735	38,185	46,971	11,708	24,340	318,528
1933	194,754	65,264	32,564	56,303	22,420	29,328	400,633
1934	170 220	59,253	34,661	46,878	20,054	15,318	355,484
	1	1935-1936 IMPO	ORTS IN TONS	OF 2,000 LBS	S.		
1935	225,773	69,237	30,231	52,407	29,550	22,225	429,423
1936		67,309	34,792	70,950	31,131	26,924	512,168

Source-Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce.



UNITED STATES

Imports of Unbleached Sulphite-1920 to 1936

(Long Tons-2,240 Pounds)

	Sweden	Canada	Finland	Germany	Norway	All Others	Total
1920	73,957	207,667	13,502	7,193	3,627	2,062	308,008
1921		88,112	24,696	14,308	3,137	4,770	208,093
1922	102 210	146,690	27,642	16,968	29,134	4,048	422,700
1923		167,725	58,602	42,851	21,222	12,388	461,853
1924	226 070	192,308	48,007	54,944	26,079	13,554	561,920
1925		253,670	48,996	42,362	20,639	20,083	579,284
1926	244 025	226,153	61,804	54,305	18,613	23,123	628,923
1927		179,630	70,106	25,487	17,747	21,011	613,856
1928	207 120	179,751	92,778	23,933	23,456	23,607	640,660
1929	250 152	190,565	109,121	16,822	18,325	16,471	701,456
1930	221 060	180,417	99,881	19,049	20,210	14,152	665,075
1931	200 (02	88,604	97,467	22,212	10,195	16,850	536,010
1932		56,335	95,579	42,330	31,402	19,667	516,207
1933	216 601	76,537	116,019	43,895	26,597	33,271	643,003
1934		80,867	112,562	47,319	22,529	24,856	603,117
	1935-19	36 IMPORTS	IN TONS OF	2,000 LBS.			
1935	377,320	67,404	146,166	50,024	16,539	35,573	693,026
1936	105 753	89,359	157,324	39,871	25,391	49,022	786,720

Source: Department of Commerce, Bureau of Foreign and Domestic Commerce.



UNITED STATES

Imports of Bleached Sulphate Pulp—By Countries of Origin—1930-1936 (Long Tons of 2,240 Lbs.)

	Canada	Finland	Germany	Norway	Sweden	Others	Total
1930	12,505	2,445	256		20.000	387	22,108
1931	22,940	2,263	160	28	7.851		33,242
1932	19,872	1,522		324	1,648		23,366
1933	24,778	2,249	******	242	9.159	******	36,428
1934	30,804	2,740	*****	452	14,279		48,275
** **	1935-193	6 IMPORTS I	N TONS OF	2,000 LBS.			
1935	51,199	4,113		28	29,262	56	84,658
1936	55,244	5,440	******	230	41,461	*****	102,375

Source-Department of Commerce, Bureau of Foreign and Domestic Commerce.

tal

470 005

093 580

369

976 818

138

926

235

593 111

528 484

123 168

456 075 010

003

117

026

108

428 275

658 375 208 compared with 17,328 tons valued at \$542,404 in 1935. Bleached sulphate imports in 1936 amounted to but 230 tons valued at \$13,305.

From Germany

All of the wood pulp imported from Germany in 1936 was sulphite, the total being 74,663 tons valued at \$2,881,857. Of this total 39,871 tons was unbleached sulphite worth \$1,353,696. Bleached sul-phite totalled 34,792 tons of a value of

U. S. Is Canada's Best Customer

In 1936 the United States took 84.9 per cent of all the total exports of wood pulp from Canada while in 1935 the United States took 80 per cent. In 1936 6 per cent went to the United Kingdom

against 8 per cent in 1935; 9.1 per cent in 1936 went to all other countries while these markets in 1935 took 12 per cent.

U. S. Is Sweden's Best Customer

Of the 2,486,210 short tons of all Of the 2,486,210 short tons of all grades of wood pulp exported from Sweden in 1936 the United States took 1,014,809 tons or 40.8 per cent. Great Britain was Sweden's second best wood pulp customer, taking 546,751 short tons in 1936 or 22 per cent of the total pulp exported from Sweden.

Paper Imports

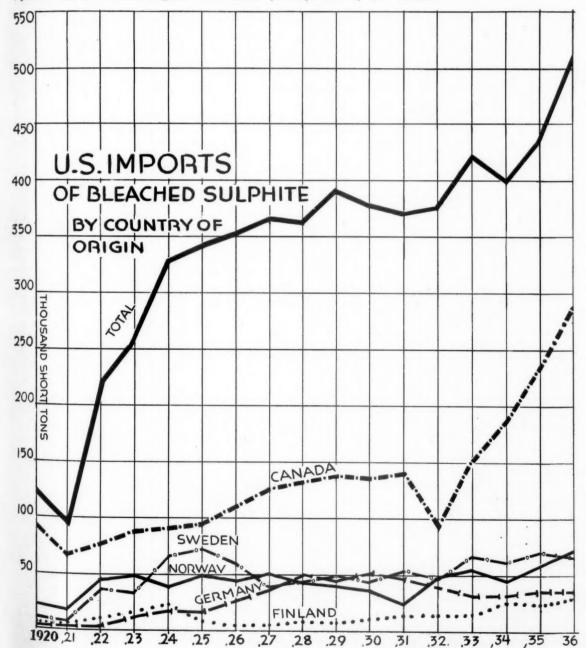
Imports of paper are not all subject to tabulation on a tonnage basis due to the inclusion of articles manufactured from paper and board, some of which are declared upon importation by the

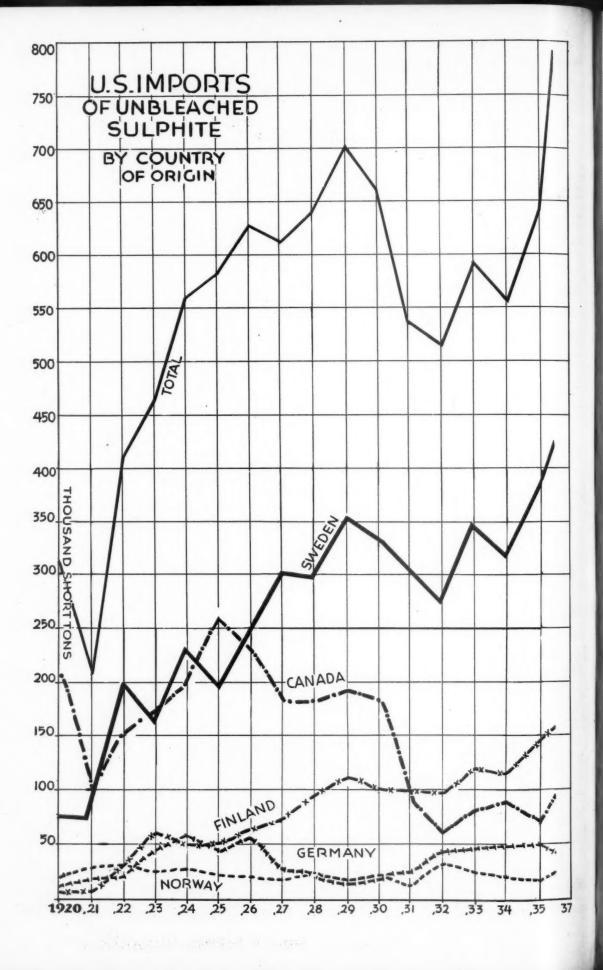
number of pieces instead of by weight.

Highlights of the imports of paper, covering those types that are recorded by the Customs by weight, will be found in the succeeding article on Reciprocal Trade Agreements and their effect upon the paper industry by Warren G. Bullock, manager of the Import Committee of the American Paper Industry.

News Print Imports

Imports of news print into the United States in 1936 totalled 2,752,000 tons compared with 2,383,000 tons in 1935, an increase of 15.5 per cent in volume. The 1936 increase over 1934 was 542,000 tons or 24.5 per cent. Details of the news print situation for 1936 will be found in the news print section and also in the statistical section of this Review Number.





Los San Ore Wa

UNITED STATES

Imports of Bleached and Unbleached Sulphate-1920 to 1936

By Countries of Origin

(Long Tons of 2,240 Pounds)

Countries:	Sweden	Canada	Finland	Norway	All-Others	Total
920	25,012	114,175	7,762	3,363	1,236	178,548
921	57,702	89,729	5,799	522	2,733	159,000
922	122,545	137,307	23,631	8,850	2,611	294,944
923	84,739	131,304	20,089	10,258	2,728	249,118
924	144,148	125,256	17,749	13,080	5,474	305,707
925	159,282	127,567	21,170	10,568	4,635	323,222
926	169,810	140,625	25,006	11,798	3,711	350,950
927	180,897	138,660	19,602	10,690	2,102	351,95
928	201,757	141,779	32,139	15,761	4,410	395,84
929	227,760	116,290	31,907	17,079	6,333	399,63
930	247,361	76,334	35,427.	13,072	3,677	338,71
931	259,238	52,700	55,692	4,385	6,183	378,19
932	227,226	37,283	45,278	13,285	1,798	324,87
933	375,583	54,412	49,288	16,513	2,612	498,40
934	332,019	77,017	52,367	14,263	2,462	478,12
	1935-1936 IM	IPORTS IN TO	NS OF 2,000 L	BS.		
935	429,916	94,748	66,286	17,356	3,036	611,34
936	499,373	117,460	92,765	23,544	4,955	738,09

Source: Department of Commerce, Bureau of Foreign and Domestic Commerce.



PACIFIC COAST PULP IMPORTS

1936*

(Short Tons-Value)

Customs District.	Unbleac Tons	hed Sulphite Value	Bleache	ed Sulphite Value	Unbleach Tons	hed Sulphate Value		oleached indwood Value		ached ndwood Value	TO Tons	TALS Value
Los Angeles	7,960	\$242,428	1,302	\$55,751	5,514	\$168,113	********		1,155	\$20,982	15,931	\$987,274
San Francisco	15,390	357,145			6,227	133,226	1,002	\$19,548	124	2,352	22,743	512,271
Oregon	1,087	23,552			4,276	147,009				***********	5,363	170,561
Washington	6,544	181,327	13,470	563,243	206		37	405	*****		20,257	751,578
Totals	30,981	\$804,452	14,772	\$618,994	16,223	\$454,951	1,039	\$19,953	1,279	\$23,334	64,294	\$1,921,684

*Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce. No bleached sulphate pulp was imported through Pacific Coast Ports in 1936.

PACIFIC COAST PULP IMPORTS

1935

(Short Tons)

Customs District	Unbleached Sulphite	Bleached Sulphite	Unbleached Sulphate	Bleached Sulphate	Unbleached	wood Bleached	Totals
Los Angeles	8,166	3,451	3,162	110	200	1,536	16,625
San Francisco	5,360	-,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	294			-,	5,654
Washington	1,107	5,988	*******		35		7,130
Oregon			7,523	******		100	7,623
Totals	14,633	9,439	10,979	110	235	1,636	37,032

Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.

PACIFIC COAST

Imports of Pulpwood

1936

Customs	Spr	Pulpwood	—Rough		Pulpwood—Peeled ——————————————————————————————————				
District.	Cords	Value			Cords		Cords	Value	
Washington	414	\$1,564	182	\$741	124	\$508	51,857	\$134,439	

Totals-All imported through the State of Washington Customs District-52,577 cords, valued at \$137,252.

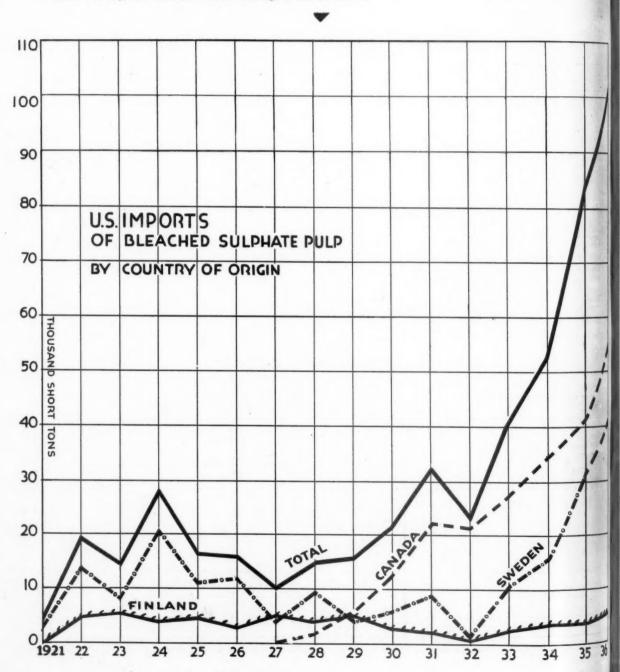
PACIFIC COAST PAPER IMPORTS

1936

(Short Tons-Value)

Customs	News Print			seproof terproof		Kraft apping	Other Wrapping		Totals	
District.	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value
San Diego	6,800	\$190,275		6+0+1000			washend		6,800	\$190,27
Los Angeles	46,820	1,546,811	1/2	\$939	1,455	\$91,438	35 lbs.	\$6	48,276	1,639,19
San Francisco	50,043	1,474,639	21/2	1,523	51	3,267			50,097	1,479,42
Oregon	54	1,920	April 100 to 100 to 100				******		54	1,92
Washington	53,941	1,920,555	******	-	******		11/2	190	53,943	1,920,74
Alaska	41	1,453	******		*******				41	1,45
Hawaii	2,424	86,520	1/8	59			21/2	615	2,427	87,19
Totals	160,123	\$5,222,173	3	\$2,521	1,506	\$94,705	4	\$811	161,697	\$5,320,21

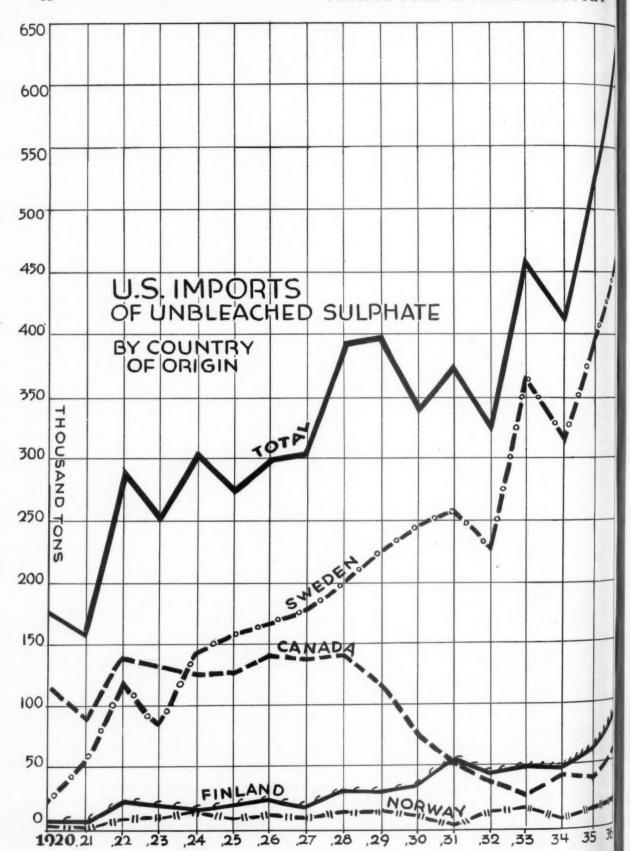
Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.





Pulp now serves air line passengers » » A new lightweight meal service tray made of compressed pulp has been adopted by the food department of United Air Lines » » » It weighs but fourteen ounces, has a casserole top with high heat retaining properties and is destroyed after use » » A complete meal is packed in this tray, the stewardess merely lifting off the top and adding soup, coffee and water » » » Dishes are of paper as are the fork, spoons and napkin » » » United Air Lines estimates that 100,000 of these trays will be used to serve passengers during 1937.

Ha Da Pa



PACIFIC COAST PAPER IMPORTS

1935

(Short Tons)

Customs District	Newsprint	Grease Proof & Waterproof	Kraft Wrapping	Other Wrappings	Totals
San Diego	4,876	****			4,876
Los Angeles	40,226	3	272	10	40,511
San Francisco	48,735	4	38	****	48,777
Oregon					*******
Washington	56,833		who was to		56,833
Alaska	. 21	****			21
Totals	150,691	7	310	10	151,018

Source: U. S. Department of Commerce, Bureau of Foreign & Domestic Commerce.

PAPER AND PULP IMPORTS OF THE UNITED STATES

For the Twelve Months Ending Dec. 31, 1935 and 1936

PAPER IMPORTS

	-12 Months, End	ding Dec., 1935		~12 Months, Endi	ng Dec., 1936
Articles—	Quantity	Dollars		Quantity	Dollars
Paper and Manufacturerstons	2,475,008 Tons	93,009,855			110,112,348
Printing paper—					
Standard news print, free	4,766,631	82,265,267		5,503,161	96,719,470
Other, n.e.s., dut. lbs.	11,560,208	246,467		21,056,735	455,347
Grease and waterproof, dut. lbs.	594,128	122,003		1,002,597	148,027
Kraft wrapping, dutlbs.	24,726,308	817,347		48,166,959	1,536,148
Other wrapping, dut	1,085,986	42,557		2,458,766	70,902
Writing and drawing, dut. lbs.	1,248,949	295,604		1,498,664	379,119
Paper and envelope combinations, dut. lbs.		26,393		-, -, -,	33,933
Surface coated, dut	1,806,788	593,262		1,665,368	550,783
Uncoated, decorated, embossed, dut. lbs.	38,062	16,120		33,382	17,629
Tissue and similar paper:	,				
Not over 6 pounds to the ream, dutlbs.	1,169,405	562,164		1,135,459	546,197
Other, dutlbs.	589,404	235,744		820,548	302,848
Pulpboard, in rolls, dut	16,716,211	288,227		22,535,608	434,113
Paperboard, pulpwood, n.e.s., cardboard, dut. lbs.	17,370,796	457,637)	* * * * * * * * * * * * * * * * * * * *	
Leatherboard, test, and wallboard, dutlbs.	15,199,326	285,098	-	42,969,074	911,130
Cigarette paper:	,,	,	,		
Flat or in bobbins, dut. lbs.	13,150,303	3,290,784		15,140,394	3,886,984
Books and book covers, dut	2,166,506	709,488		1,471,490	458,583
Hanging paper (wall paper), dut. lbs.	363,784	123,689		5,619,433	319,228
Duplex, decalcomania, not printed, free lbs.		98,177		743,523	154,588
Paper boxes, dut.		434,061		820,332 lbs.	412,504
Papier mache and pulp manufactures, dut		324,173			373,830
Other paper and manufactures, dut	***********	2,209,654		***************************************	2,400,985

PAPER BASE STOCK IMPORTS

	-12 Months, End	ling Dec., 1935	~12 Months, En	ding Dec., 1936~
Articles—	Quantity	Dollars	Quantity	Dollars
Paper base stocks		82,043,697		98,919,594
Pulpwoodcords	1,037,332	7,760,700	1,209,760	9,481,914
Rough:	-,,-	, ,	.,,	.,,
Spruce, freecords	83,054	669,417	141,751	1,102,199
Other, freecords	16,605	88,681	58,752	360,099
Peeled:				
Spruce, freecords	748,011	6,013,576	799,428	6,739,170
Other, freecords	189,237	986,667	178,032	902,984
Rossed:		,		
Spruce, freecords	374	2,104	31,597	377,462
Other, freecords	51	255		************
Wood and other pulp:				
(Tons = 2,000 pounds, airdry weight)				
Mechanically ground wood pulp:				
Unbleached, freetons	172,203	2,980,955	206,844	3,688,971
bleached, freetons	17,838	296,430	20,934	362,253
Sulphite wood pulp:				
Unbleached, free tons	693,026	24,026,390	786,720	26,778,644
Dieached, free tons	429,424	21,934,054	512,168	25,824,769
Sulphate, wood pulp:				
Unbleached (Kraft), free tons	526,684	15,893,593	635,722	19,771,988
Dieached, free tons	84,658	5,193,789	102,375	5,844,031
Joua Dulp. tree	9,416	409,636	12,737	565,572
other pulp, free	394	26,074	329	54,772
10f paper stock tree	201,310,993	2,411,424	275,892,835	4,673,041
All other paper stock, free lbs.	77,800,892	1,110,652	103,435,628	1,873,639

Effect of Trade Agreements On American Paper Industry

Imports Up, Exports Down-Situation Becoming Problem For Labor

by Warren B. Bullock, Manager Import Committee, American Paper Industry

WHEN the present Administration announced its program for reciprocal trade agreements, it was admitted that duties on some commodities must be reduced and imports stimulated, in order that there might be an increase exports of other commodities. In other words, some industries were to be chosen for sacrifice in order that others might prosper.

With statistical data for 1936 now available, it is possible to make a factual study of the effect of the reciprocal trade agreement policy upon the paper industry. It is evident from these figures that the American Paper Industry has been chosen as one of the "victims" of the reciprocal trading policy.

There may be question whether the whole foreign trade of the United States is benefitting from these agreements. There is no question as to the effect of the agreements on the paper industry.

The foreign trade of the American Paper Industry in 1936 showed a loss of \$9,000,000 as compared with 1929, the psylvolous as compared with 1929, the nearest comparable year. Imports in 1936 were not as high as in 1929, but exports in 1936 were approximately fourteen million dollars lower than in 1929.

U. S. Tariffs Were Not High

The trade agreements were negotiated on the premise that the United States is a high tariff nation, and the leader in the erecting of tariff walls, of which the State Department talks so mournfully. This premise is a fallacy. The United States is far down the list of tariff barrier nations, according to figures disclosed by the United States Tariff Commission for 1933 the year before the trade agreement law went into effect. With the tariff law went into effect. With the tariff reductions effected by the trade agree-ment law, the United States in 1936 had fallen to at least eleventh place.

Whether or not a nation is a high tar-iff nation is determined by computing the percentage of total customs receipts to total imports. Duty free imports into the United States constitute well over 60 per cent of all imported merchandise, and it happens that duty free newsprint and pulp combined constitute the largest item in value of duty free imports, coffee being second on the list.

The fallacy of the claim that the United States is the chief high duty nation is shown by the following list of fifteen principal importing nations, showing the average per cent of duty levied on imports, the figures being those of the Tariff Commission for 1933, Table I.

The charge that the United States is

the chief protectionist country is foreign propaganda accepted by American free trade advocates. This is shown by the fact that Great Britain, the world's outstanding so-called free trade country, collects an average duty of 25 per cent on imports compared with the 19.8 per cent collected by the United States.

A further illuminating comparison of A further illuminating comparison of tariffs in free trade Britain and protec-tionist America is that of the rates on dutiable merchandise. In 1929, the last year for which British statistics are available, the average rate of British duty on dutiable merchandise was 65 per cent as compared with the American average of 40.1 per cent. This was before the "iniquitous" Hawley Smoot bill was passed which increased the average rate of duty on imports about 1.6 per cent.

Results of Trade Agreements

Coming to the direct results of the reciprocal trade agreements on the American Paper Industry there is given below a detailed summary of statistics for 1936 for both those countries which ship pa-per to us, and those with which we have consequential export trade.

EXPORTS

The reciprocal trade agreement with Cuba, with the exception of that with Canada, granted the only substantial export concessions received by the American Paper Industry. Under the agreement, Cuba reduced its duty rate on three paper items, comprising 20 per cent our paper export trade to that republic, with the following results, Table II.

Canada

Canadian duties on paper are generally higher than those imposed by the United States on comparable grades. The trade agreement slightly reduced Canadian duties on a wide variety of pa-

"With statistical data for 1936 now available, it is possible to make a fac-tual study of the reciprocal trade agreement policy upon the paper in-dustry," says Mr. Bullock.

"It is evident from these figures that the American Paper Industry has been chosen as one of the 'victims' of the reciprocal trading policy." pers. Government statistics so far published do not give details of grades of paper imported from and exported to Canada. Consolidated statistics follow in Table III.

In addition to the above, however, Canada exported to the United States duty free standard newsprint paper to a value of \$96,000,000 in 1936, an increase of over \$20,000,000 as compared with 1934, and an increase of 350,000 tons over the previous banner year of

Other Countries

While some other trade agreements reduced foreign tariffs on American pa pers, the exports have been so small that they are not compiled separately.

IMPORTS

Wrapping Paper

The Swedish agreement reduced the rate of duty on wrapping paper from 30 per cent to 25 per cent, effective August 5, 1935, and the Finnish agreement made a further reduction in the rate on kraft wrapping to 20 per cent, effective November 1, 1936. Statistics comparing imports into the United States in 1934, when the reduction was in effect for five months, with 1936 follow in Table IV and V

The 1936 imports of not less than 13,500 tons of Machine Glazed Kraft, made on special machines were equivalent to 27% of the American production of 51,000 tons in that year. \$100,000,000 in new capital pledged for expansion of the American Paper Indus try in the last few months, not one dollar has gone into the Machine Glazed Kraft field, where the foreign paper can be delivered at less than the American cost of production.

Paper and Pulp Boards

The Swedish Agreement reduced the duty on processed paper boards from 30 per cent to \$14.50 per ton, not to exceed 30 per cent, and to be not less than 15 per cent. The Canadian agreement reduced the rate on unprocessed pulp board for use in the manufacture of wallboard from 10 per cent to 5 per cent, and on such boards when processed from 30 per cent to 15 per cent. The rate on all unprocessed board was bound at 10 per cent. The change in imports comparing 1934 and 1936 is shown by the following table, Table VI.

Nu

From From

Fron

Y

ub-of to in

rer, ites o a in-red

of

nts pa-hat

30 gust ade raft No-

34, five IV

han aft,

ivarion

for dus-dol-azed

can

the a 30 exhan ment sulpcent, from rate d at opers a by

TABLE I

Numerical	Order	Nation	Average Ad Valorem Duty Collection
1		Australia	30.9
2		India	30.5
3		Argentina	28.7
4	*************************	T 1	25.9
5	****************************	United Kingdom	25
6		Germany	24.8
7	*************************	New Zealand	21.9
8		South Africa	20.3
9		UNITED STATES	19.8
10		China	19.3
11		Canada	19
12		France	15.5
13		Sweden	10.8
14		Belgium	10.3
15		Ianan	6

TABLE II - CUBA

Pre-Agreement Year	Post-Agreement Year	Increase in
Ending Aug. 31, 1934	Ending Aug. 31, 1936	1935-36 over 1933-34

Value of L	J. S.	Paper	Exports	on	which	Cuba	
Reduced	Duty	Rates					9

\$315,000	\$698,000
\$317,000	\$698,0

\$383,000

TABLE III — CANADA

1930	1934	1936	Increase in 1936 over 1934	Per Cent of Increase 1936 over 1934
Value of Imports of Dutiable Paper from Canada \$1,201,000	\$ 587,000	\$1,152,000	\$ 565,000	96
Value of Exports of All Paper	, , , , , , , , , , , , , , , , , , , ,	, ,	, ,	
to Canada \$9,622,000	\$3,405,000	\$4,905,000	\$1,500,000	44

TABLE IV MACHINE GLAZED KRAFT WRAPPING

MACHINE	LALED KHAFI	WILLIAM		
	1934	19	36	
	Tons	Value	Tons	Value
From Sweden	2,190	\$185,209	9,000	\$644,000*
From Finland	1,842	112,673	4,800**	253,000
From Others	(542 pounds)	35	(1)	(69)
Total	4,032	\$297,917	13,800	\$897,000

MACHINE FINISHED KRAFT WRAPPING

	19	34	1	936
From Sweden	Tons	Value	Tons	Value
From Finland		***	6,850	\$430,000
From Others	******		3,600	220,000
others		***	(1)	(69)
		**********	10,450	\$650,000

^{*}The unit value in 1936 was \$20 per ton lower than in 1934.

**Finland was able to ship throughout 1935 and ten months of 1936 at the reduced duty rate granted Sweden before it made reciprocal concessions to the United States.

NOTE—No M. F. Kraft was imported in 1934. Allocation of kraft imports in 1936 are estimated from the official segregated statistics first available in November, 1936. For this reason 1936 figures for M. G. and M. F. Kraft are only given in round figures.

Cigarette Paper

The French agreement reduced the duty on cigarette paper from 60 per cent to 45 per cent, effective July 1, 1936. The increase in imports in 1936 over 1934 as shown in the following table was about \$250,000 in the last six months when the agreement was effective, and this increase was equivalent to half the entire American production in the first six months under the old duty rate:

1934 1936

Other Papers

Various decreases in duty were made on other papers, and are listed below. The reduction in duty on vegetable parchment in the Belgian agreement from 3 cents per pound and 15 per cent to 2 cents per pound and 10 per cent was of especial advantage to Germany, Italy and Great Britain who have made no reciprocal agreements with this country. That the increase was not greater is due to the reduction in price of the American product to cost, even though that price was 2 cents per pound above the delivered cost of the foreign product, such price reduction being made through the abandonment of previously planned plant improvements and wage increases.

Summarizing the general foreign trade situation, it is becoming increasingly evident that the present high wage levels and consequent high prices for American paper are serving to both decrease our

Mr. Bullock says, "Summarizing the general foreign trade situation it is becoming increasingly evident that the present high wage levels and consequent high prices for American paper are serving both to decrease our export trade and increase the import competition."

export trade and increase the import competition.

Low Foreign Wages

The ruling minimum wage rates in United States paper mills are about 25 cents per hour higher than the average rate for all workers in paper mills in Sweden, one of the highest wage rate nations competing with American paper. The average Swedish wages in paper mills are given by American labor officials as 16 cents. The wages in Finland are nearly 7 cents per hour lower than in Sweden. Wages in Czechoslovakia, which is proving such an important competitor for many American manufacturing industries, including paper, are exceedingly low, being compared at times to the wage rates in Japan.

The higher selling prices of American paper are making this a most attractive

The higher selling prices of American paper are making this a most attractive market for foreign paper mills, and at the same time the American cost of production is making it increasingly difficult for American mills to meet foreign competition in a common export market. Kraft wrapping, for instance, selling at about 4 cents per pound in this country, must meet Swedish and Finnish

paper which is sold at about 2½ cent. With foreign shipping operating at lower rates than American ships must charge, including the probable hidden subsidies to foreign ship operators, the difficulty of selling American paper abroad is evident.

Labor's Problem

Increasingly, this question of foreign trade in paper will become an issue for labor. Under the present conditions, the United States is importing foreign paper which means that we are actually importing cheap foreign labor with which American labor must compete, not only for export markets, but for our own American market.

Effects on Total Foreign Trade

The reciprocal trade agreement policy is accentuating this difficulty for American paper producers. What it is doing for the nation's foreign trade is shown by total figures showing value of all exports and imports. In 1929 America's exports totaled a value of \$841,000,000 greater than imports. In 1934, the year before the reciprocal agreements became effective, exports were \$477,000,000 in excess of imports. In 1935 the excess of exports was \$204,000,000 greater than imports, but in 1936 with the reciprocal agreements in full effect the excess dropped to \$32,000,000. In January, 1937, the imports totaled eighteen million dollars in excess of exports—and this is the foreign value of imports, not the price paid by American consumers.

valiton
(Cexpall Unport was valid of Pace Was the Valid bott expuns Unfro

Under this policy foreign nations are importing American dollars and shipping us cheap labor in return.

TABLE V OTHER WRAPPING PAPER

	193	4	193	6
	Pounds	Value	Pounds	Value
All Countries	1,602,658	\$59,417	2,458,766	\$70,902***

***While the quantity increased 50 per cent, the value increased less than 20 per cent. As in the case of kraft wrapping the value was lower after the Treasury Department overruled a complaint of Dumping.

TABLE VI FROM CANADA FROM OTHER COUNTRIES 1936 1936 1934 Processed Paperboard ... 6,054 \$ 23,707 Pulpboard Processed for Wallboard 16,033 Pulpboard Unprocessed for Wallboard.... 317,627 416,872 All Other Paperboard ... 503,976 887,423 \$887,423 \$323,681 \$456,612 \$503,976

TOTAL IMPORTS, ALL BOARDS, ALL COUNTRIES

1934	1936
\$827,657	\$1,343,935

TABLE VII

	Trade Agreement		- 44
Grade	with	1934	1936
Sensitized Photo Paper	Belgium	\$310,186	\$322,10
Vegetable Parchment	Belgium	26,619	39,10
Papeterie	France	23,633	33,93
Total increase on all imports of duti	able paper		\$ 3,145,00
Increase in imports of paper on wh which previous rates were bound	ich trade agreements redu	ced duties, not including those on	2,084,00
Imports of duty free standard newsp			\$178,000,00

low-

dden the aper

for the

aper

only

OWn

e olicy

do-le is

934,

000,

reat-

e re-

Tan-

-and

not ers.

ship-

2***

IES

36

,423 .423

36 ,101 .101 ,933 ,000 .000 ,000

Pacific Coast Exported 82% of 1936 Pulp Exports

FOR the fourth consecutive year exports of wood pulp from the United States gained in 1936, attaining a new record both in tonnage and in value. Exports totalled 193,485 short tons in 1936 valued at \$10,600,176.

Of this total Pacific Coast pulp mills exported 158,969 tons or 82 per cent of all the wood pulp exported from the United States. The value of the pulp exports from the Pacific Coast in 1936 was \$8,303,004 or 78 per cent of the value of all pulp exports last year.

value of all pulp exports last year.

The pulp mills in the State of Washington exported 140,072 tons of the total of 158,969 tons exported from the entire Pacific Coast industry. The value of the Washington exports was \$7,680,896.

The State of Washington pulp exports were almost all sulphite pulp, unbleached, ordinary bleached and rayon bleached. About 60,000 tons of rayon grades of bleached sulphite were exported.

Almost the entire exportation from Washington went to Japan, including the 60,000 tons of rayon grades.

In 1930 wood pulp exports from the Pacific Coast amounted to 21,488 tons valued at \$903,219, less than 50 per cent both in tonnage and value of the total exports of wood pulp from the entire United States. Since 1930 exports of pulp from West Coast pulp mills have increased 7 times in tonnage and 9 times in value, while total United States pulp exports in the same period increased 4

times in tonnage and a little over 5 times in value.

Japan a Growing Market

With the remarkable expansion of rayon production in Japan has come a demand for steadily increasing demand for more and more rayon grade bleached sulphite pulp, as Japan can produce but a small proportion of her pulp requirements. Japanese paper production is also expanding, taking larger quantities of or-dinary pulps each year.

Japan still depends for most of her paper pulp upon the Scandinavian countries but today over 40 per cent of her rayon pulp requirements are supplied by United States pulp mills.

Oregon, Washington and British Co lumbia are by reason of location the most natural sources for Japan to look to for her wood pulp requirements. Freight charges are lower from the Pacific Coast to Japan than from Scandinavia to Japan. Then, too, the ocean lanes be-tween the Pacific Coast and Japan would be easier to protect in case of a European than the long and easily closed route from Scandinavia.

Iapanese interest in the Pacific Coast as a source for larger supplies of wood pulp is frequently in evidence. At this time the export pulp market is no more attractive than the domestic market, hence Pacific Coast pulp producers have, for the most part, refrained from expanding their shipments to Japan, preferring to sell in the domestic market.

Exports Versus Imports

The United States is a pulp importing country, not because of any lack of raw material, but by reason of political action dating back to the days when wood pulp and news print were put on the free list. Exports of wood pulp are there-fore comparatively recent and relatively small in proportion to pulp imports.

In the past year exports of pulp from the United States amounted to but 8.5 the United States amounted to but 8.5 per cent in volume of the total imports for the year, and were but 12.8 per cent in value of the value of the imports. Pulp imports in 1936 totalled 2,277,829 short tons against exports of 193,485 short tons. The value of imports was \$82,881,000 compared with the \$10,-600,176 pulps of reliable process. 600,176 value of pulp exports.

Exports Increased in 1936

The 1936 exports of wood pulp increased 21,775 tons or 12.7 per cent above the 171,710 tons exported in 1935. In value the 1936 exports increased \$1,967,205 or 22.7 per cent. In 1935 exports of pulp rose 20.1 per cent in tonnage and 23.2 per cent in value over

Sulphite pulp with 187,571 tons exported in 1936 amounted to 96.8 per cent of all the wood pulp exported from

EXPORTS OF WOOD PULP FROM PACIFIC COAST PORTS

1930 - 1936 (Tons of 2,000 lbs.)

Customs	1930 -		1931		1932	_	1933-	1	934-	1	935-		1936
Districts. Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value
Wash 20,816	\$878,352	28,305	\$1,461,837	31.688	\$1,574,625	67.346	\$2,916,447	110,846	\$6,078,757	127,896	\$7,368,975	140,072	\$7,680,896
Uregon 490	16 678	3,657	117,513	1,397	36,135	30	1,140	5,471	203,624	14,103	524,424	18,776	617,867
S. Francisco 182	8,189	1,589	58.082	1.356	40,557	769	21,990	13	1,803		·	121	4,241
Los Angeles	******	*****			******		******	4,992	356,008	******			********
San Diego			*****	*****	*****	*****		14	693		*****	*****	*******
Totals 21,488	\$903.219	33,551	\$1.637.432	34,441	\$1,651,317	68.145	\$2,939,577	121.336	\$6,640,885	141,999	\$7,893,399	158,969	\$8,303,004

EXPORTS OF PAPER FROM PACIFIC COAST PORTS 1930 - 1936

(Tons of 2,000 lbs.)

Customs Districts.	Tons	930 — Value	Tons	1931 — Value	Tons	1932 — Value	Tons	Value	Tons 1	934 Value	Tons	Value	Tons	1936 Value
Washington	3,715	\$442,395	1,495	\$162,773	1,686	\$154,245	4,530	\$270,160	5,735	\$283,571		\$197,278	4,807	\$245,887
Oregon	3,463	254,328	4,383	263,192	2,579	130,033	3,895	173,179	11,254	462,088	12,801	436,378	15,904	1,031,489
San Francisco	1.471	114,393	1.967	121.785	1,524	87,766	2,644	96,620	4,069	169,014	1,367	64,726	4,985	535,816
Los Angeles	24	. 3,012	4	427	27	1.910	129	8,329	5.53	21,431	285	12,072	176	6,495
San Diego	3	434	5	768	2	426	4	453	27	4,165	25	2,934	*********	
Totals	8,676	\$814,562	7,854	\$548,945	5,818	\$374,380	11,202	\$548,741	21,638	\$940,269	18,356	\$713,388	25,872	\$1,819,627

EXPORTS OF PAPER BOARD

FROM PACIFIC COAST PORTS

1930 - 1936

(Tons of 2,000 lbs.)
BOXBORD, BRISTOL, OTHER PAPER BOARD

Customs	1	930 —	1	931 -		932 -	1	933 -	1	934	1	935 —	_	1936 —
Districts.	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value
Washington	654	\$47,519	832	\$51,381	228	\$10,483	482	\$23,335	232	\$13,073	192	\$14,755	244	\$17.55
Oregon	3,256	139,485	3,870	148,575		126,518		76,612	690	30,638	542	22,829	179	14,20
San Francisco	7,381	367,693	5,735	227,611	1,927	89,475		163,669	2,352	101,089	3,127	123,917	3,853	194,08
Los Angeles	21/2	384	34	3,012	21/2	272 108	64	5,104	313	15,023	69	6,452	57	7.57
San Diego	1/4	82	1 1/2	283	1/2	108	1/2	98	5	542	2	156		***********
Totals	11,294	\$555,163	10,473	\$430,862	6,515	\$226,856	7,050	\$268,818	3,592	\$160,365	3,932	\$168,109	4,333	\$233,41

BRITISH COLUMBIA

Pulp and Paper Exports

From All British Columbia Ports

(Compiled by Vancouver Merchants' Exchange-Short Tons)

Destination—	1928	1929	1930	1931	1932	1933	1934	1935	1936
Australia	14,550	21,480	15,940	11,835	15,314	14,685	26,053	26,026	42,876
Argentine	34,045	*********	609	*	19,752	28,604	3,985	*********	-
Central and South America.	1,667	14,677	16,503	22,637	6,404	12,693	7,314	2,867	
Canada (Eastern ports)	**********	2,130	4,339	4,457	3,820	4,620	24,800	27,677	29,614
China	35	1,870	2,620	489	16,105	26,494	40,062	3,281	5,084
Japan	57,230	45,526	54,865	78,631	59,959	100,257	93,212	155,530	131,795
New Zealand	20,548	9,525	9,214	5,363	4,251	4,254	2,845	3,206	5,289
United Kingdom		1,728	621	9,047	486	347	6,953	4,164	3,698
United States	172,017	156,788	174,017	157,943	130,771	117,733	128,224	123,343	175,861
Other Countries	1,119	277	90	458	731	4,984	11,611	4,989	3,171
Total Short Tons	301,211	254,001	278,818	290,860	257,724†	314,671	345,059	351,083	397,388

*Argentine shipments in 1931 and 1935 are included under Central and South America. †Includes 131 tons of paper shipped from New Westminster, destination not available.

the United States. The value of sulphite exportations was \$10,272,777. This compares with 166,416 tons of sulphite valued at \$8,347,968 in 1935 and 139,269 tons valued at \$6,815,640 in 1934.

Bleached sulphite pulp in 1936 accounted for 119,528 tons of the 1936 tonnage and were valued at \$8,098,962. Unbleached sulphite pulp accounted for 68,043 tons of the year's exports and were valued at \$2,173,815.

Last year 4,689 tons of soda pulp were exported having a value of \$267,278, compared with 2,131 tons exported in 1935 valued at \$104,932, and 1,339 tons valued at \$69,228 in 1934.

Miscellaneous pulp exports in 1936 totalled 1,225 short tons valued at \$60,-121, compared with 3,167 tons valued at \$180,071 in 1935 and 2,321 tons valued at \$120,691 in 1934.

Paper and Board Exports

Exports of paper, board, pulp and paper base stocks will be found in the table accompanying this article. The dollar value of the exports rose less than two million dollars.

From the Pacific Coast 25,872 tons of paper and board were exported in 1936, valued at \$1,819,697, compared with 18,356 tons valued at \$713,388 in 1935, an increase in tonnage of 7,516 tons or 40.9 per cent and \$1,106,309 or 155 per cent.

The 1936 Pacific' Coast exports of paper and board increased 150 per cent in both tonnage and value over the 8,-676 tons valued at \$814,562 exported in 1930.

British Columbia Exports

Exports of pulp and paper from British Columbia are combined in the figures obtainable at this date. Total exports for 1936 aggregated 397,388 tons as compared with 351,083 tons in 1935, an increase of 46,305 tons or 13.1 per cent. The 1936 exports represented an increase of 96,177 tons over the 301,211 tons exported in 1928 or an increase of 31.8 per cent.

to

ci

7

The United States receives the largest share of British Columbia pulp and paper exports, 175,861 tons in 1936 against 123,343 tons in 1935. British Columbia exports to the United States have returned to the total exported in 1928 and 1930.



Photograph by courtesy of E. I. duPont deNemours & Ca.

Scene in a plant where Du Pont rayon yarn is manufactured, showing the care taken in sorting the sheets of wood pulp » » » Bleached sulphite pulp in sheet form is laid out and sorted by careful counting into batches to insure an even running quality throughout the lot.

3,413

,876

,614 ,084 ,795 ,289

,698

,171

,388

1936 ritish tates d in

Export Highlights

Pulp exports from Pacific Coast ports in 1936 amounted to 82 per cent of all pulp tonnage exported by the United States. Pulp exports from Pacific Coast ports in 1930 constituted 44 per cent of all pulp tonnage exported by the United States in that year.

U. S. Wood Pulp Exports							
		Short Tons	Value				
1930		48,426	\$2,070,553				
1931	**********	53,307	2,405,642				
1932	***************************************	47,860	2,037,553				
1933	***************************************	79,191	3,113,883				
1934	*************	142,931	7,005,559				
1935	***************************************	171,710	8,632,971				
1936		193,485	10,600,176				

Pulp exports from Pacific Coast ports in 1936 amounted to 78 per cent of the total value of all pulp exported from the United States. In 1930 exports of wood pulp from the Pacific Coast constituted 44 per cent of all pulp exported from the United States.

Exports of wood pulp from the Pacific Coast have increased 7 times in tonnage since 1930.

The value of wood pulp exported from Pacific Coast ports has increased 9 times since 1930.

Exports of paper and paper board from Pacific Coast ports in 1936 amounted to 17 per cent of the total tonnage exported from the United States, and 9.5 per cent of the value of such exports.

Exports of paper and paper board from Pacific Coast ports in 1936 increased 1½ times in tonnage over the 1930 exports. Value also increased 1½ times over 1930.

PAPER AND PULP EXPORTS OF THE UNITED STATES

For the Twelve Months Ending Dec. 31, 1935 and 1936

PAPER EXPORTS

	-12 Months, End	ling Dec., 1935	-12 Months, Ending Dec., 1936-		
Articles—	Quantity	Dollars	Quantity	Dollars	
Paper and Manufactures	****	20,519,550		22,460,542	
Printing paper—					
Newsprint paperlbs.	45,044,940	861,333	29,147,352	594,131	
Book paper, not coatedlbs.	19,912,552	1,026,634	18,096,095	997,572	
Cover paper lbs.	1,399,500	176,904	1,349,181	193,216	
Greaseproof and waterproof paperlbs.	5,856,717	1,137,661	7,747,151	1,604,256	
Overissue and old newspapers	166,398,277	1,121,726	138,086,864	932,779	
Wrapping paperlbs.	39,229,055	1,882,504	36,070,658	1,846,699	
Kraft Wrapping lbs.	***************************************		5,890,703	249,543	
Surface-coated paperlbs.	7,959,194	843,426	8,412,505	898,814	
Tissue and crepe paperslbs.	4,754,526	588,675	5,342,220	579,327	
Toilet paper lbs.	8,283,260	657,703	8,550,039	699,941	
Paper towels and napkins lbs.	2,475,815	236,819	3,027,345	279,021	
Boxboard (paper board and strawboard)	52,681,922	1,135,396	55,151,073	1,241,307	
Bristols and bristol board	2,294,378	140,669	1,803,292	115,484	
Other paper board	25,400,443	1,037,199	22,202,512	1,063,121	
Sheathing and building paper	8,436,688	259,776	8,406,808	314,683	
Fiber insulating board or bat sq. ft.	43,885,992	1,269,005	54,399,106	1,451,618	
Wall board of paper or pulp sq. ft.	11,905,414	301,243	11,382,706	310,938	
Blotting paper	1,993,228	202,461	2,359,219	241,493	
Filing folders, index cards and other office forms lbs.	869,282	290,116	1,095,453	375,716	
Papeteries (fancy writing paper) lbs.	249,371	56,072	284,914	60,070	
Other writing paper	24,492,613	1,652,857	25,293,871	1,983,658	
Paper hangings (wall paper) lbs.	1,002,374	105,731	1,127,234	120,104	
Paper bags		753,310	13,798,633	798,339	
Boxes and cartons lbs.	10,893,574	656,864	11,302,322	740,324	
Envelopes	855,590	143,734	797,798	138,398	
Vulcanized fiber sheets, strips, rods and tubeslbs.		1,005,864	4,160,513	1,168,845	
Cash-register and adding-machine paper	3,483,319	261,954	3,534,906	262,793	
Other paper and paper products	-,,	2,713,914		3,198,352	

PAPER BASE STOCK EXPORTS

	-12 Months, End	ing Dec., 1935	~12 Months, Ending Dec., 1936~		
Article— Paper base stocks	Quantity	Dollars 9,890,499	***************************************	22,257,038	
Pulpwoods cords	29,267	181,807	20,720	124,162	
Wood pulp-		,			
Sulphite wood pulp	148,586	8,347,968	187,571	10,272,777	
bleached sulphate tons			119,528	8,098,962	
Unbleached sulphate tons	\$		68,043	2,173,815	
Soda wood pulp tons	1.899	104,932	4,689	267,278	
Other wood pulptons		180,071	1,225	60,121	
Rags and other paper stock lbs.	61,085,153	1,075,721	41,283,865	1,259,913	

World Rayon Expansion To Require More Pulp

Estimate U. S. Industry Consumed 181,000 Tons in 1936—Will Need 300,000 Tons in 1941—
Japan Expected to Consume 100,000 Tons More This Year

NE of the major factors in the steady expansion of the pulp industry on the Pacific Coast is the rayon, Cellophane and allied industries which utilize bleached sulphite pulp chemically.

This chemical useage of bleached sulphite has since 1930 required increasing tonnages from Pacific Coast mills until today the Rainier Pulp & Paper Company of Shelton, Washington, and its licensees, the Grays Harbor Pulp & Paper Company and the Olympic Forest Products Company, are said by publications in the rayon industry to be the largest producers of bleached sulphite pulp of rayon grade in the United States.

Pacific Coast Capacity Up

Upon examination of the bleached sulphite pulp industry on the Pacific Coast it will be found that capacity ratings for 1937 show an increase from the 780 tons per day in 1936 to 1,310 tons per day, or an increase in daily rated capacity of 66.4 per cent.

Of these totals the capacity of bleached sulphite pulp for rayon grades has risen from 555 tons per day in 1936 to 780 tons per day in 1937, an increase of 40.5 per cent in the daily rated capacity of rayon pulp producing mills.

On the basis of 310 operating days per year the Pacific Coast industry now has a rated yearly capacity of around 240,000 tons of rayon grade pulps.

Pacific Coast Exports

From the 100 tons or so exported from the Pacific Coast in 1930 the exportation of rayon grades of bleached sulphite has risen steadily until in 1936 the exports amounted to more than 60,000 tons. Practically all of the exported rayon pulp goes to Japan.

Consumption Estimates

Exact data on the amount of wood pulp consumed by the viscose rayon yarn producers, the makers of transparent cellulose film and the manufacturers of nitrocellulose lacquers and plastics, is not available, but estimates can be made of the amount consumed by the viscose rayon industry which are considered by the industry to be quite accurate. Estimates of the amount of wood pulp entering into the production of transparent cellulose film are not as accurate but are sufficiently so to provide a good indicator of the consumption of wood pulp. The consumption of wood pulp by the lacquers and plastics industry is not available.

In 1936 the consumption of wood pulp by the viscose rayon, staple fiber and transparent cellulose film industries, such as Cellophane, was approximately 181,000 tons of rayon grade bleached sulphite wood pulp. Of this total the transparent cellulose film manufacturers used about 31,000 tons of wood pulp and the viscose rayon and staple fiber producers accounted for 150,000 tons.

Forecast for 1937

Conservative estimates made by authorities in the rayon industry estimate that the 1937 consumption of wood pulp by viscose rayon, staple fiber and transparent cellulose film producers will increase about 27,000 tons over the 1936 consumption or 208,000 tons. Of this the rayon industry is expected to use an additional 22,000 tons and the cellulose film makers another 5,000 tons.

Taking into consideration the continued growth of the rayon industry and the factors present which give every indication of maintaining this yearly expansion, if not actually accelerating it, one of the largest rayon manufacturers predicts a total production by 1941 which would require some 300,000 tons of wood pulp or an increase of 92,000 tons over the estimated 1937 production and 119,000 tons over the actual consumption in 1936.

Speaking of the future expansion of the rayon and staple fiber industries, Francis A. Adams, editor of the Rayon Textile Monthly, says in his April, 1937, editorial, in part:

"The prospect for rayon, according to the judgment of one of the largest manufacturers and one thoroughly familiar with the industry, looks to a poundage that within the next five years should exceed the total of raw silk used in this country by a ratio of ten to one. "To visualize the expansion of rayon

"To visualize the expansion of rayon in the United States during the present and the four ensuing years is to see a set-up that would make the output for 1938 touch, or exceed 400,000,000 pounds; that of 1939 reach a total of approximately 475,000,000 pounds; in 1940 production to reach 550,000,000 pounds and the 600,000,000 pounds production per year total to be attained in 1941. This would be having rayon continue its progressive increase as scored during the past ten years and as indicated by all signs for the near future. Here, indeed is an industry that exceeds all the metes and bounds that have ever been attached to cotton, silk or wool, the fibers that have heretofore been most indispensable to man."

United States rayon yarn producers are running at capacity with less than three days supply of yarn on hand so great is the demand of the weavers and knitters for rayon and staple fiber. There

is an actual shortage of rayon in the first half of 1937.

A large amount of new rayon spinning capacity is in the process of installation by American rayon manufacturen and it was expected late in 1936 that a good part of this new productive capacity would be operating late in 1937. But it now appears practically none of the new capacity will be ready for operation before the first and second quarters of 1938 due to delays in the manufacture of the necessary equipment.

While the American rayon industry will show an increase in production for the present year it will be small compared to the expansion scheduled for 1938. To make up the deficiency between the practically static supply and the growing demand, textile mills using rayon yarn are importing more foreign yarn. It is not expected that these imports will be permanent as the textile industry strongly favors American made yarn.

strongly favors American made yarn.
According to the Rayon Organon, the rayon industry, in common with other industries, may experience labor troubles during the year, which, together with rising raw material costs, might cause an increase in rayon yarn prices.

Rayon staple fiber production and consumption should easily reach new high levels during 1937. With the present high wool prices, rayon staple fiber should cut further into wool consumption during the year, especially in its us aspects. Some real tariff relief for rayon staple fiber may be hoped for during 1937 so as to protect the domestic industry from Japanese ecompetition especially.

Thus, continues the Rayon Organoa, 1937 should provide a period for developing new uses and outlets for rayon in 1938 when the new capacity now under construction really will begin to come into production. This business building and development job for 1937 is probably the most important task of the year. But past achievements of the industry along this line leave little cause for doubt that the task not only will be accomplished, but that it will be well done.

U. S. Production Up 8% Over 1935

Rayon yarn production in the United States reached a new high total in 1936 with an increase of 8 per cent over the 1935 production. Producion in 1936 amounted to 277,626,000 pounds compared with 257,557,000 pounds in 1935. Production of viscose and cuprammonium yarn in 1936 totalled 214,926,000 pounds, up 6 per cent from the 1935 figure of 202,010,000 pounds. Acetate yarn production was 62,700,000 pounds, an increase of 13 per cent over the 1935 total of 55,547,000 pounds.



the

pinstalters at a icity it it new be-938 the

stry for omfor owyou arn.
hon, with a ther tight ices.
and me wisher tion use you in ininder owyou in inyou in ininder owyou in ininder owyou in ininder ow-

ited 936 the 936 om-135. am-26,-935 tate

Photograph by courtesy of E. I. duPont deNemours & Co

In less than 15 years rayon has risen from a point in volume production and style which was insignificant, to a place where it is now used by every style leader. The consumption in 1936 was more than 297 million pounds. Rayon has been responsible for the creation of new textures, surface finishes and draping qualities >>> This one-piece sports frock is of white sailcloth, a fabric of Du Pont "Thick and Thin" rayon yarn, woven by Stunzi Sons Silk Company.

According to the Rayon Organon, from which the above data was obtained, the lack of installed capacity in the United States in 1936 held back production to these small increases, especially in the viscose and cuprammonium distinces.

Viscose and cuprammonium yarn accounted for 77.4 per cent of the 1936 total yarn production, the acetate division producing 22.6 per cent. At the end of 1936 there were twelve yarn and staple fiber producers by the viscose process (nineteen plants), five producers of acetate yarn and staple fiber (five plants), and two producers of cupram-monium yarn (two plants). Eliminating duplications, this makes a total of sixteen producers with twenty-six plants.

Domestic consumption of rayon yarn 1936, representing total shipments plus imports and less exports, amounted to 297,594,000 pounds, an increase of per cent over the 1935 consumption of 252,676,000 pounds. If rayon staple of 22,070,000 pounds. It rayon staple fiber data were added to this yarn data, the total rayon consumption figures would be 323,000,000 pounds in 1936 and 259,300,000 pounds in 1935, or an increase of 25 per cent for the year.

The 1936 year-end stocks, says the Rayon Organon, decreased 21,533,000 pounds below the similar 1936 figure to pounds below the similar 1936 figure to give one of the lowest stock figures ever recorded. This stock figure is but a three days' supply in the viscose and cuprammonium division, and there is every reason to believe that the acetate stock was correspondingly very low.

Japan's Rayon Industry

The Japanese rayon spinning industry which takes almost all of the rayon pulp exported by Pacific Coast mills, is operating at a curtailed rates due largely to tariffs and quotas against Japanese textiles by a number of countries. Trade agreements which limited textile exports have also contributed to the curtailment.

But these same factors have caused

Japan to make an attempt to become more self-sufficient in raw materials for textiles. Development of the staple fiber industry to reduce the imports of raw cotton and wool has come through the difficulty in getting the countries from whom Japan buys these materials to take her textiles in return. Besides, staple fiber mixed with wool and cotton breaks down tariff classifications.

With the emphasis on staple fiber the consumption of rayon grade pulp in Japan in 1937 is expected to far more than take up the slack in the regular rayon spinning industry.

More Than 300% Increase

If estimates made at the beginning of 1937 are borne out by actual production during the year the manufacture of staple during the year the manufacture of staple fiber in Japan, which was 51,000,000 pounds in 1936 is expected to jump to 210,000,000 pounds in 1937, an increase of better than 330 per cent or 159,000,000 pounds. This expansion in staple fiber will require an additional 100,000 tons of wood pulp, very little of which can be supplied domestically. Japan is interested in obtaining an increasing amount of this pulp from the Pacific

Backed, it is said, by the government, the Japanese staple fiber industry plans to produce 320,000,000 pounds of staple fiber in 1938, an increase of 110,000,000 pounds over the planned production for 1937. This would require another 70,000 tons of pulp over and above the 1937 tonnage or a total increase for 1938 over 1936 of 170,000 tons.

Ultimately the Japanese industry, it is said, plans to expand staple fiber production to 480,000,000 pounds yearly which would be an increase of 431,000, 000 pounds over 1936 production, an 845 per cent increase.

This ultimate production of 480,000, 000 pounds of staple fiber would require some 300,000 tons of wood pulp annually.

year

cen

cific

the

Pace part of correction of cor

pe wa in pr co of ex ye

th ald of the fire b

Japanese Pulp Imports

It is estimated by a good authority that the 1936 imports of rayon pulp into Japan were around 150,000 metric tons as compared with 128,348 metric tons in 1935 and 102,932 metric tons in 1934, which jumped from 47,955 metric tons in 1933.

In 1930 and 1931 Japan had no do-mestic production of rayon pulp so the entire requirements of around 20,000 metric tons were imported. However, domestic production entered in 1932 and by 1935 had reached 33,435 metric tons, reducing the percentage of imports to 79.3 per cent, although the imports in the five year period increased 8 times.

Of the 128,348 metric tons of rayon pulp imported in 1935 the United States supplied 43.3 per cent or 55,998 tons. Norway supplied 49,351 tons or 38.1 per cent; Finland, 12,878 tons or 10 per cent; Canada, 6,905 tons or 5.3 per cent, and Sweden, 4.056 tons or 3.1 per cent.

Japanese imports figures for 1936 are not as yet available here.

ESTIMATED PRODUCTION OF AMERICAN RAYON YARN PRODUCERS FOR 1937*

(In Pounds)

		- Processes -		
Producers.	Viscose	Acetate	Cupram- monium	
American Bemberg Corp	***********		8,000,000	
American Enka Corp.	18,500,000	************		
Celanese Corp. of America		40,000,000	B0000000000000000000000000000000000000	
Delaware Rayon Corp.	6,500,000	************		
Du Pont Rayon Corp.	60,000,000	12,000,000		
Hampton Company	1,500,000	~~~~~		
Hartford Rayon Corp.	3,600,000	*******		
Industrial Rayon Corp.	16,700,000			
New Bedford Corp.	4,600,000	######################################		
New Process Corp.		******	1,000,000	
North American Rayon Corp	25,000,000			
Skenandoa Rayon Corp.	5,500,000	******		
Tennessee-Eastman Corp.	****	14,000,000		
Tubize Chatillon	13,000,000	22	N	
Viscose Company	100,000,000	15,000,000	***********	
Woonsocket Rayon Co.	1,500,000		***********	
*	256,400,000	81,000,000	9,000,000	
Total for the three processes		346,	000,000 lbs.	

*Not included, rayon staple fiber of which about 20 million pounds will be produced nor parent cellulose film, imitation horse hair, straw, etc.

Data from the May, 1937, issue of Rayon Textile Monthly.

World Rayon Production in 136

The Rayon Organon estimates world rayon production in 1936 as follows:

	Mil	lions o	Pour	nds
	(est.) 1936	1935	1934	1930
Rayon Yarn Production	1,050	937	770	451
Rayon Staple Fibre Prod	275	134	54	7
Total Rayon Production	1,325	1,071	824	458

Included in the above estimates, says the Rayon Organon, are noteworthy increases in German, Japanese, British and Italian staple fiber production and Japanese yarn production.

Japanese yarn and staple fiber production in 1936 of 275 million and 51 million pounds respectively, make that country the world's largest rayon producer, a postition formerly held by the United States for nearly two decades. Y

ing ific

ent, ans

000

Employment Increasing In Pacific Coast Industry

Stability Features Pulp and Paper Payrolls in Past Decade*

THE development of pulp, paper and board manufacturing together with paper converting during the past ten years in Washington, Oregon and California has frequently caused the question to arise as the contribution being made to the income of the communities adjacent to the mills.

Generally speaking people on the Pacific Coast have become acquainted with the existence of a pulp and paper industry only within the past several years. Much has been talked and printed about the contributions of the industry to the more efficient utilization of Pacific Coast forests. Little has been said about the industry's contribution to employment.

This contribution to employment of Pacific Coast citizens is of importance, particularly so during the recent period of depressed business when in several communities the pulp and paper mills were the only large employers still operating. The relative stability of the pulp and paper industry's payroll is most impressive when compared with other wood using industries. The decline was not as great and the return to normal has been accomplished more quickly.

Ten years has witnessed an increase in pulp and paper mill employment in the Pacific Coast states which is significant in its indication of the trend toward replacement of fluctuating sawmill employment with steady pulp and paper mill employment. A relatively new wood using industry gradually replaces a slowly declining one. Thus the history of sawmilling and pulp and paper in New England, Northern New York and the Lake States is beginning to repeat itself.

On the Pacific Coast the pulp and paper industry is conceded to be a long way from its peak, while the sawmilling industry passed its point of maximum production in 1926. In the normal course of the industries the manufacture of pulp and paper should continue to expand its employment rolls for many years to come.

Though the cycle of development is similar to that of other regions of the United States it will not be identical for the cutting of lumber will without doubt always be a large Pacific Northwest industry. It will not decline to the extent of the same industry in New England or the Lake States. The reason for its more permanent nature on the Pacific Coast is the ability of the region to regrow timber far more rapidly than in the older lumbering sections. Reproduction will maintain a perpetual lumber industry as well as a permanent pulp and paper industry.

^aStatistical data from the State of Washington Department of Labor and Industries, State of Oregon Industrial Accident Commission and the State of California Division of Labor Statistics and from the U. S. Bureau of Census of Manufacturers for 1927 and 1935.

Indirect Employment

The statistical data on employment and wages paid for Washington, Oregon and California which appear in this article indicate but a small portion of the employment actually created by the growing Pacific Coast pulp and paper industry.

It is not well known outside the industry that it is a purchaser of tremendous quantities of machinery and supplies. Indirectly the manufacture of pulp and paper creates more employment than it does directly.

It is not possible here to go into the ramifications of this fact. It will suffice to point out the more obvious employment creating purchases. As wood is the basic raw material logging and pulpwood cutting employment is stimulated. Transportation of the wood to the mill along with other supplies coupled with the shipping of the finished products develops work for many people.

The steady buying of chemicals is a very important employment factor. Felts and wires are another. Heavy equipment is a major item which periodically must be replaced either because of wear or obsolescence. Small equipment should be classified with supplies because it is purchased at regular intervals. Paint, hardware and electrical supplies boost local dealer's sales. This list could be extended to great length but what is given above indicates clearly the employment creating purchasing power of the pulp and paper industry.

A detailed analysis of the direct employment by pulp, paper, paper board and converting plants in Washington, Oregon and California, follows:

The reasons for this expected increase in future employment are threefold. First, as pulpwood logging becomes less incidental to sawmill logging, more workers will be directly dependent on pulp production. Second, the growing trend toward the greater conversion of pulp into finished paper products will require numbers of new employees. Third, continued expansion of the industry through construction of new pulp and paper mills will add to the numbers employed.

Forestry figures indicate that Oregon timber resources can support a pulp and paper industry several times its present size. Ultimate full development of the industry will mean to industrial workers replacement of much of the payrolls lost in Oregon through the decrease in the manufacture of lumber and wood

STATE OF OREGON

MPLOYMENT in the pulp and paper industry of Oregon, during the past ten years, has materially increased. While much of this increase took place prior to 1929 and 1930, employment held its own comparatively well through the so-called depression years, and is now again on the upward trend.

Despite the fact that in related industries, such as the manufacture of wood and wood products, employment in Oregon took serious drops, the numbers employed in pulp and paper plants remained fairly constant, demonstrating the relative stability of the industry

Actual payrolls decreased considerably during the period, but not as greatly as did those in similar industries in the state.

During the fiscal year 1927-1928 the Oregon ulp and paper industry employed 1,939 persons directly. This figure dropped to a low of approximately 1,566 persons in 1931. Note that this is estimated in the table on a basis of six months report only, and that no data for 1930 is available.

In 1936 Oregon pulp and paper mill direct employment was approximately 2,697 persons, an increase of 39 per cent over the 1927-1928 figure.

Payrolls increased in the same period over 30 per cent, rising from \$2,691,-220.18 in the fiscal year 1927-1928 to \$3,578,624.01 in the calendar year 1936.

During this same period a comparative industry, that of wood and wood products manufacture, showed a net decrease in numbers employed, of 34.16 per cent. Because of the larger number employed by that industry in 1927-28 than employed in the manufacture of pulp and paper, this figure actually represents a much greater loss in numbers than it would have if applied to the latter industry. The wood products industry in 1927-28 employed a total of 25,243 persons, but in 1936 only 18,069, a loss of nearly 7,174 men.

Wood products payrolls fell 56.1 per cent, from \$37,303,247 to \$23,894,402, during this time. These data are given in greater detail in the accompanying tables.

In connection with consideration of these figures, it is well to note that the wood and wood products industry is generally believed to have already passed through its major period of large expansion, while the pulp and paper industry is still in the early stages of enlargement. The depression following 1929 caused a lull in this expansion, but it is worthy of note that the numbers employed remained fairly constant during this time.

The outlook for the future is, then, that both payrolls and numbers employed in manufacture of pulp and paper are destined to continue to in-crease much more rapidly than in re-lated industries. In this, the industry will be creating employment to replace, at least in part, that lost in other branches of the forest industries. It will thus aid in maintaining the proper balance in forest economics in Oregon.

State of Washington

F THE three Pacific Coast states the State of Washington has shown the largest increase in the number of persons employed and in the total payroll of the pulp and paper industry in the past ten years. Washington's pulp and paper employment and payroll also withstood the depres-

sion onslaught more successfully, show-

ing a greater stability.

The wage dollars paid out by the pulp The wage dollars paid out by the panand paper industry in the State of Washington more than doubled in the ten years from 1927 through 1936, the increase being 103.03 per cent. The hours worked increased in the same period 89.55 per cent, reflecting the higher hourly rate being paid to pulp and paper mill employees in 1936 over 1927.

The previous peak year for the pulp and paper industry in Washington, 1930, was exceeded in payroll in 1936 by 8.21 per cent and in hours worked by 5.51

per cent.

It will be noted from the table that neither the industry's payroll nor the hours worked declined during depression years to the 1927 figures.

On the other hand the lumbering payroll (including logging and saw-milling and miscellaneous wood work-

ing plants) dropped in 1932 to but 20 per cent of its 1927 payroll and likewise dropped to 32 per cent of the hours worked in 1927.

The payroll of all hazardous industry in the State of Washington dropped in 1923 to 56 per cent of its 1927 rotal

peal F the

grea

per pay the

than 8.2

wor dus I ind whi

ber

wer wor Pul was the

wer in dev

gree whit me pu equ plo con with the

tale nu wh bu tan tale po stale In wo La

be tall by the Fo

in the State of Washington dropped in 1933 to 56 per cent of its 1927 total. In the Washington table, prepared by R. M. Van Dorn, statistician for the State of Washington Department of Labor and Industries, it is pointed out that the payroll of all hazardous industry in the state for 1936 is 5.36 per cent less than the hours worked, 4.08 per cent less than in 1927, and the payroll is 16.25 per cent and the 4.08 per cent less than in 1927, and the payroll is 16.25 per cent and the hours worked 13.18 per cent less than the peak year of 1929.

For the lumbering industry the payroll for 1916 was 37.92 per cent less and the hours worked 40.99 per cent less than in 1927, and the persell in the persell in the persell in the persell in 1927, and the pers

less than in 1927, and the payroll is 40.45 per cent less and the hours

STATE OF OREGON

Payrolls and Employment 1927-1936*

PULP AND PAPER MANUFACTURING

Year	Payroll	Work Days	Approximate Number Employees
Fiscal Year 1927-1928	\$2,691,220.18	581,833	1,939
Fiscal Year 1928-1929	2,946,218.92	640,724	2,136
Six Mos. July to Dec., 1931, Inc.	1,017,435.13	235,114	1,566
Calendar Year 1932	1,896,692.09	504,311	1,681
Calendar Year 1933	1,819,904.95	535,789	1,786
Calendar Year 1934	2,577,436.84	700,842	2,336
Calendar Year 1935	2,984,889.22	778,547	2,837
Calendar Year 1936	3,578,624.01	839,063	2,697

*Statistics furnished by the Oregon State Industrial Accident Commission. Data from July 1, 1929, to June 30, 1931, not available.

STATE OF OREGON

Payrolls and Employment 1927-1936*

LOGGING, SAWMILLING AND OTHER WOODWORKING EXCEPT FURNITURE

Year	Payroll	Work Days	Approximate Number Employees
Fiscal Year 1927-1928	\$37,303,247.94	7,572,941	25,243
Fiscal Year 1928-1929	41,527,222.99	8,458,177	28,194
(Six Mos. July to Dec., 1931, Inc.)	9,151,629.22	2,511,442	8,371
Calendar Year 1932	10,881,821.85	3,252,878	10,843
Calendar Year 1933	11,624,343.30	3,682,746	12,276
Calendar Year 1934	16,751,384.40	4,409,412	14,698
Calendar Year 1935	20,028,984.96	4,856,833	16,189
Calendar Year 1936	23,894,402.56	5,420,549	18,069

*Statistics furnished by the Orogon State Industrial Accident Commission. Data from July 1, 1929, to June 30, 1931, not available.

ALL HAZARDOUS INDUSTRY OF STATE Preceding Year Payroll Hours Work -10.00% -27.42% -30.11% -2.18% 25.33% Increase or Decrease 16.00% 6.52% 6.08% Compared With -19.56% 2.29% 8.91% -9.19% -20.19% 10.12% 21.41% PAYROLLS AND HOURS WORKED 35,389,039 51,799,595 63,093,612 STATE OF WASHINGTON 29,693,289 23,101,145 16,853,140 86,986,842 Payroll 1927 - 1936*

130,841,328 127,973,488 131,720,152

Workmen Hours

LUMBERING

PULP AND PAPER MANUFACTURING

Increase or Decrease

1931 1932 1933 1934

187,578,233 129,023,888 131,893,000 188,705,890 260,002,808 288,903,912 271,223,403

312,935,429 284,179,483 255,078,920 317,120,680 397,369,096 437,600,400

260,928,662

161,702,804

1930 1929

1928

\$255,669,929

396,071,584 414,002,480

Payroll

Workmen Hours

worked 58.62 less than the industry's peak year of 1929.

20

ed ne of ut no. 36 d, ad he

y ss nt

31

36

37

97

te

es 43 94

71

43

89

peak year of 1929.

For pulp and paper manufacturing the 1936 payroll was 103.03 per cent greater and the hours of work 89.55 per cent greater than in 1927, and the payroll was 25.66 per cent greater and the hours worked 19.26 per cent greater than in 1929. The payroll in 1936 was 8.21 per cent greater and the hours of work 5.51 per cent greater than the industry's peak year of 1930.

In the year 1927 the pulp and paper industry in Washington had a payroll which was but 5.82 per cent of the lumbering payroll and the hours worked were but 5.88 per cent of the hours worked in the lumbering industry.

By 1936 the relationhsip had altered. Pulp and paper manufacturing payroll

Pulp and paper manufacturing payroll

By 1936 the relationhsip had altered. Pulp and paper manufacturing payroll was in the past year 19.03 per cent of the lumbering payroll and the hours worked in the pulp and paper industry were 18.95 per cent of the hours worked in the lumbering industry.

These percentages show the steady development toward a closer balance of the wood using industries in Washington. Although the pulp and paper industry has contributed in small measure to the replacement of the tremendous loss in lumbering payroll, its replacement value is not to be measured in direct employment alone, as was brought out earlier in this article.

Logging and sawmilling provide greater direct employment than indirect, while with the pulp and paper industry it is known that the indirect employment created by the large and steady purchase of supplies and equipment is equal to or greater than the direct employment. Exactly what the relative contributions are cannot be determined with certainty due to the diffusion of the purchasing.

It will be noted that the Washington

with certainty due to the diffusion of the purchasing.

It will be noted that the Washington table gives hours worked rather than number of employees. This is accurate while any total of employees is at best but an approximation due to the constant flux of men. The Washington table has been prepared from the reports received in connection with the state industrial accident insurance law. Industrial employers report only hours worked to the State Department of Labor and Industries, not the number of persons employed.

Labor and Industries, not the number of persons employed.

A rough approximation of the number employed can be determined by taking the total hours worked, dividing by the length of the working day, and then dividing that result by 300 days. For the pulp and paper industry in the State of Washington the number of employees in 1927, figuring on an 8 hour day, 300 day year, would be 3,213. In 1936 using the same method but a 6 hour day, the number employed would be approximately 8,133. be approximately 8,133.

The U. S. Bureau of Census, Census The U. S. Bureau of Census, Census of Manufactures for 1927 gives the number of employees in the pulp and paper industry in the State of Washington as 3,580 and for the last census in 1935 as 6,398. This is as accurate a total of the average number of persons employed as can be obtained.

State of California

NFORTUNATELY statistics on employment in the State of Cali-fornia for the wood using indusis incomplete and therefore not dependable as an indicator of the em-ployment and payrolls in the past decade.

They are included here to give the reader a rough idea of the California

* Prepared by the Statistical Division, Department of Labor and Industries, State of Washington, Pulp and Paper Mfg.: Payroll and hours work respectively in 1936 are 103.03% and 89.55% greater than in 1927, and 25.66% and 19.26% greater than in 1929, greater than in 1930, the peak year of that industry. Olympia, Washington

year of that industry.

of all industry. Lumbering Industry: Payroll and hours work respectively in 1936 are 37.92% and 40.99% less than in 1927, and 40.45% and 58.62% less Industry as a whole: Payroll and hours work respectively in 1936 are 5.36% and 4.08% less than in 1927, and 16.25% and 13.18% less than than in 1929, the peak year in 1929, the peak

51,106,876 57,808,831 77,214,714

41,214,176 64,161,624 98,102,528

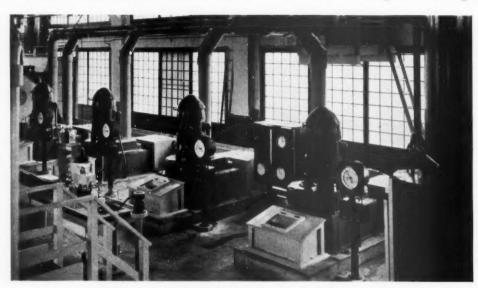
-28.45% -47.32% -49.29%

51,066,187

37.07% 28.54% 19.18% 46.32%

Increase or Decrease Compared With Preceding Year 2.93% -25.52% -34.60% -35.77% 23.90% -2.19% 13.11% .08% 6,990,889 5,063,638 5,166,375 7,435,151 \$4,855,526 9,110,285 7,845,335 5,573,223 Payroll Workmen Hours 7,710,848 11,835,457 11,360,944 13,874,832 12,275,072 9,693,579 8,960,224 Payroll Hours Work -23.26% -27.57% 43.91% 9.37% 21.23% 14.78% 40.77% 16.12% 2.03% Preceding Year Compared -18.12% -21.13% 10.33% 44.28% 13.03% 8.18% 22.10% 6.12%

From Wood Room to Machine Room Western Gear Drives for Every Purpose



WESTERN Vertical Frame DV 60, 75 HP to 25 RPM Speed Reducers in new Weyerhaeuser Bleach Plant in Longview



Chain Conveyors in Wood Room



Pulp Drying Machine Drives

From wood room to machine room there is a specially designed WESTERN GEAR SPEED RE-DUCER for every drive in the pulp and paper mill.

Pacific Coast pulp and paper mills have been using WEST-ERN SPEED REDUCERS for years. They have found WESTERN units operate with smooth, trouble-proof effici-ency year after year under the most severe conditions.

WESTERN Offers Prompt, Reliable Service

Give us the facts and our engineers will select the proper gear unit for your drive.

PARALLEL SHAFT—RIGHT ANGLE-VERTICAL SPEED REDUCERS

Made with

HERRINGBONE—HELICAL—SPUR—BEVEL -SPIRAL BEVEL-WORM GEARS

PACIFIC GEAR & TOOL WORKS Incorporated

SAN FRANCISCO PORTLAND



EL PASO

LOS ANGELES

"Gear Products From Gear Specialists"

STERN GEARS

RY

situation. The number of persons employed is for the month of February for each of the past ten years and the payroll given is the average weekly payroll for the month. To furnish a very sketchy view of the yearly payrolls the weekly payroll has been multiplied by 12. This naturally amplifies any subnormal or abnormal conditions in employment which may have existed in any one of the ten Februaries.

It is evident that the paper and paper converting industry in California is recovering rapidly this year and will very likely have the largest payroll of any year since 1927 but with the number of employees several hundred less.

year since 1927 but with the number of employees several hundred less.

As in Washington and Oregon the paper industry did not undergo as severe a decline as did the logging and sawmill industries or the combined woodworking industries, showing a stability related to that of the two other Pacific Coast states.

Pacific Coast states.

The U. S. Bureau of Census, Census of Manufactures for 1927 gives the following data on the pulp and paper industry in California: Employees numbered 1,160; the total salaries and wages paid amounted to \$2,510,037; the cost of materials was \$7,779,475; value of the products was \$13,938,098; and, the value added by manufacture was \$6,158,623.

The 1025 Comment of the control of the cont

was \$0,170,025.

The 1935 Census of Manufactures shows 2,119 employees who earned in wages and salaries \$2,822,557; cost of materials was \$6,572,554; the value of the products was \$13,502,039; and, the value added by manufacture was \$6,929,485.

The 1935 census shows an increase in the number of employees in salaries and wages paid but a decrease in the cost of materials, the value of the products and the value added by manu-

Since the 1935 Census of Manufactures developments in the paper converting and board industry in California have materially increased the employment and total production.

STATE OF CALIFORNIA

Employees and Payroll Paper and Paper Goods

Year Mont		Number of Employees	Weekly Payroll	Annual Payroll (Estimated)
Septe	mber			
1936	***************************************	2,967	\$71,208	\$3,702,816
1935	*******************************	2,458	49,160	2,556,320
1934	***************************************	2,220	44,400	2,308,800
1933	********************************	1,974	41,454	2,155,608
1932	***************************************	2,247	46,064	2,395,328
1931		2,797	62,933	3,272,516
1930		2,591	57,002	2,964,104
1929	***************************************	2,923	70,152	3,647,904
1928	***************************************	3,253	79,699	4,144,348
1927		3,267	83,962	4,366,024

*From records of the Bureau of Statistics, Department of Industrial Relations, State of California. Annual payroll estimated by this journal.

STATE OF CALIFORNIA

Employees and Payroll

Logging, Sawmills, Planing Mills*

Year a Month		Number of Employees	Weekly Payroll	Annual Payroll (Estimated)
Septen	nber			
1936		11,649	\$283,071	\$14,719,692
1935	***************************************	9,301	202,762	10,543,624
1934		10,803	216,060	11,235,120
1933	*******	10,932	218,640	11,369,280
1932		9,021	180,420	9,381,840
1931		12,993	285,846	14,863,992
1930		14,481	399,676	20,783,152
1929		19,573	548,044	28,498,288
1928		21,472	618,394	32,156,488
1927		23,308	667,609	34,715,668

*From records of the Bureau of Statistics, Department of Industrial Relations, State of California. Annual payroll estimated by this journal.

PAPER — SUMMARY OF STATES

Census of Manufacture - 1927

State.	No. of Establish- ments	Salaried Officers & Employees ¹	Wage Earners (Av. for the year)	Salaries ¹	Wages	Cost of Materials, Fuel and Electric Energy	Volume of Products	Value Added by Manufacture
California	11	171	1,439	\$425,334	\$2,084,703	\$7,779,475	\$13,938,098	\$6,158,623
Oregon	6	133	1,139	274,635	1,541,266	7,054,162	15,050,427	7,996,265
Washington	12	207	2,049	615,551	2,989,403	10,313,026	19,746,323	9,433,297

¹ Not including data for employees of central administrative offices.

Source: Census of Manufacturers for 1927, Bureau of Census, Department of Commerce.

PULP (WOOD AND OTHER FIBER)—SUMMARY BY STATES

Census of Manufacture - 1927

State.	No. of Establish- ments	Salaried Officers & Employees ¹	Wage Earners (Av. for the year)	Salaries ¹	Wages	Cost of Materials, Fuel and Electric Energy	Volume of Products	Value Added by Manufacture
Oregon	6	144	668	\$190,531	\$952,262	\$3,341,981	\$4,951,914	\$1,609,933
Washington	13	87	1,237	228,910	1,670,615	5,896,997	9,201,570	3,304,573

Not including data for employees of central administrative offices.

Source: Census of Manufacturers for 1927, Bureau of Census, Department of Commerce.

SEMCO QUALITY IS ECONOMY

CAREFULLY selected materials plus efficient, intelligent application of these materials assures the sulphite mill operator today the lowest lining costs per ton of pulp in the history of the industry.

STEBBINS specializes in the lining of all types of pulp and paper mill equipment in which a ceramic lining may be used for protection against corrosion or slime formation.

Your inquiries will have the prompt and careful attention of our engineers.

Stebbins Engineering & Mfg. Co.

WATERTOWN, N. Y.

MONTREAL

SEATTLE

PAPER—SUMMARY BY STATES

Census of Manufactures - 1935

(This report supplements that entitled "Paper," issued February 15. All figures are preliminary and subject to revision).

	No. of Establish- ments	Salaried Officers & Employees ¹	Wage Earners (Av. for the year)	Salaries	Wages	Cost of Materials, Fuel and Electric Energy	Value of Products	Value Added by Manu- facture
United States	591	11,689	103,345	\$30,198,717	\$110,200,308	\$429,113,355	\$711,793,299	\$282,679,944
California	11	229	1,890	587,852	2,234,705	6,572,554	13,502,039	6,929,485
Connecticut	20	216	1,583	672,077	1,782,308	5,272,218	10,033,571	4,761,353
Delaware	6	42	287	78,605	253,883	895,224	1,267,435	372,211
Illinois	26	361	3,638	1,011,348	4,042,779	12,445,708	24,443,097	11,997,389
Indiana	15	202	1,992	533,678	2,016,779	6,054,566	11,004,395	4,949,829
Louisiana	7	156	1,649	331,795	1,953,843	14,332,734	22,309,369	7,976,635
Maine	26	935	8,114	2,021,294	8,493,103	36,362,536	53,499,799	17,137,263
Maryland	7	111	1,963	235,030	1,712,445	5,752,256	9,211,043	3,458,787
Massachusetts		1,341	10,147	3,680,967	10,502,593	28,779,382	52,683,867	23,904,485
Michigan	40	1,101	10,630	2,907,664	11,749,360	43,098,868	70,171,831	27,072,963
Minnesota		208	1,960	563,513	2,173,080	8,994,950	13,966,572	4,971,622
New Hampshire	21	194	2,313	459,343	2,315,072	9,431,437	14,124,221	4,692,784
New Jersey	30	349	3,853	1,254,574	4,378,787	16,423,977	30,690,233	14,266,256
New York	105	1,484	12,260	3,649,292	13,098,191	51,868,622	81,375,530	29,506,908
Ohio	47	1,142	8,862	2,959,698	9,682,639	36,801,428	64,256,487	27,455,059
Oregon	6	145	1,852	321,564	1,910,773	8,150,309	12,361,310	4,211,001
Pennsylvania	47	970	7,893	2,586,686	8,867,979	32,184,986	55,154,468	22,969,482
Tennessee	6	59	514	137,593	509,180	2,304,335	3,893,162	1,588,827
Vermont	. 8	65	856	266,862	979,949	3,691,251	5,382,930	1,691,679
Virginia	9	228	2,208	622,023	2,250,324	14,472,077	21,113,875	6,641,798
Washington	13	252	2,680	691,962	3,239,287	15,209,778	27,017,325	11,807,547
West Virginia	. 5	60	648	185,567	646,759	2,500,524	4,118,345	1,617,821
Wisconsin		1,284	10,765	3,209,483	10,829,994	47,196,055	72,477,525	25,281,470
Other States2	24	555	4,788	1,190,247	4,576,496	20,317,580	37,734,870	17,417,290

¹ Not including data for employees of central administrative offices.

PULP (WOOD AND OTHER FIBER)—SUMMARY BY STATES

Census of Manufactures - 1935

(This report supplements that entitled "Pulp," issued December 18, 1936 All figures are preliminary and subject to revision).

Į	No. of Establish- ments	Salaried Officers & Employees ¹	Wage Earners (Av. for the year)	Salaries	Wages	Cost of Materials, Fuel and Electric Energy	Value of Products	Value Added by Manu- facture
United States	188	2,071	23,627	\$4,826,156	\$23,401,212	\$96,176,352	\$167,208,261	\$71,031,909
Louisiana	6	92	1,612	151,203	1,454,014	4,394,135	9,680,269	5,286,134
Maine	25	265	3,286	649,376	3,325,208	14,021,118	22,759,007	8,737,889
Michigan	10	101	940	234,673	888,033	3,448,088	5,620,406	2,172,318
Minnesota	7	96	803	201,474	861,298	3,401,596	5,507,834	2,106,238
New York	39	200	2,137	442,602	2,210,184	8,483,345	13,116,454	4,633,109
Oregon	7	51	998	97,876	963,142	3,651,684	5,878,582	2,226,898
	8	74	1,152	205,323	1,090,419	4,297,459	7,349,160	3,051,701
Tennessee	6	68	727	165,611	611,134	2,927,889	7,380,298	4,452,409
Vermont	3	4	73	14,951	56,922	151,327	249,224	97,897
Virginia	9	127	1,645	373,638	1,348,627	8,391,145	13,178,602	4,787,457
Washington	17	419	3,047	998,082	3,521,651	14,024,744	26,207,541	12,182,797
Wisconsin	27	252	3,041	615,440	2,874,665	12,272,607	21,398,605	9,125,998
Other States2	24	322	4,166	675,907	4,195,915	16,711,215	28,882,279	12,171,064

²Alabama, 3 establishments; Arkansas, 1; District of Columbia, 1; Florida, 1; Georgia, 2; Iowa, 2; Kansas, 2; Mississippi, 2; Missouri, 2; North Carolina, 4; Rhode Island, 1; South Carolina, 2; Texas, 1. Figures combined to avoid disclosing, exactly or approximately, any data reported by individual establishments.

Source: Census of Manufacturers for 1935, Bureau of Census, Department of Commerce.

¹Not including data for employees of central administrative offices.

²Alabama, 3 establishments; Arkansas, 1; Florida, 1; Maryland, 1; Massachusetts, 3; Mississippi, 2; Missouri, 1; New Hampshire, 3; North Carolina, 3; Ohio, 2; South Carolina, 1; West Virginia, 3. Figures combined to avoid disclosing, exactly or approximately, any data reported by individual establishments.

Source: Census of Manufacturers for 1935, Bureau of Census, Department of Commerce.

Pulp and Paper Products of the Pacific Coast Industry

The Great Diversification of the Western Industry–Everything From Pulp to Paper Doilies – Is Illustrated by This List of Products Manufactured on the Pacific Coast

A

ADHESIVE PRODUCTS, INC. San Francisco

Gum Sealing Tape Book Binders' Hollands Stay Tape Adhesives, Glues, Gums, Pastes

ANGELUS PAPER EXCELSIOR PRODUCTS CO.

Los Angeles Products

Adding Machine Paper
Cash Register Paper
Tabulator and Teletype Paper
Addressing and Listing Papers
Ticker Tape
Serpentine
Other Roll Paper Specialties
Paper and Wood Excelsior
Paper and Wood Furniture Pads
Embossed Chip Board
Pipe and Tire Wraps

ARIZONA WAXED PAPER CO. Benson, Arizona

Waxed Vegetable Crate Liners Waxed Specialties Waxed Powder Papers

B

BARTRAM PAPER PRODUCTS CO., LTD. Vancouver, B. C.

Products

Bag Specialties
Candy Bags
Cellophane Bags
Coffee Bags
Garment Containers
Glassine Bags
Greaseproof Specialties
Grocery Bags
Laundry Bags
Millinery Bags
Shopping Bags
Notion Bags

BATES VALVE BAG ORPORATION

Converting Plants at Seattle, Washington; Emeryville and Los Angeles, California

Products
Multi-wall Paper Valve Bags
Multi-wall Paper Bags (open-mouth)
Cement, Lime and Plaster Bags, etc.
Sugar and Flour Bags
Moisture-proof Bags, Etc.

Valve Bag Filling Machines and Automatic Scales

J. E. BERKHEIMER MFG. CO. Tacoma, Wash.

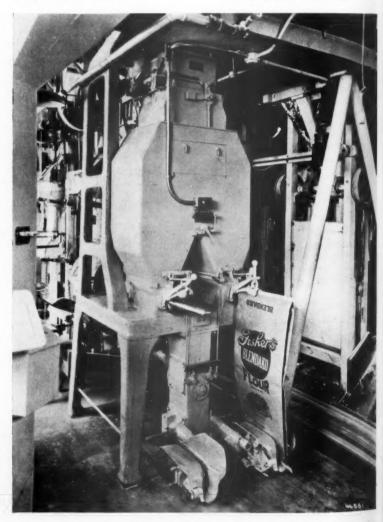
Products
Saturating Felt
Building Paper
Deadening Felt
Chip and Straw Board

BRITISH COLUMBIA PULP & PAPER CO., LTD.

Office, Vancouver, B. C. Mills, Port Alice and Woodfibre, B. C.

Products
Bleached and Unbleached Sulphite

Pulp Wood Cellulose for Cellophane and Rayon Manufacture Refined Sulphite Screenings



A Bates Valve Bag filling machine, with the bag in position to be filled, in the modern Seattle flour mill of the Fisher Flouring Mills Company.

RY

PER

3. C.

phin

and

BROWN PAPER GOODS CO. Los Angeles and Oakland

Products

Glassine Bags White Laid Candy Bags Paper Napkins

C

CALIFORNIA CONTAINER CORP. Emeryville, Calif.

Products
Corrugated Egg Cases
Corrugated Fibre Cannery Cases
Corrugated Shipping Containers
Fruit and Vegetable Containers
Dried Fruit Cases
Fruit Pads

CALIFORNIA FRUIT WRAPPING MILLS, INC. Pomona, Calif.

Products

Citrus Wraps— Treated and untreated, printed and unprinted, one or two colors, basis weight 10 lbs., M. G. and M. F.

Deciduous Wraps—
Oiled and unoiled, printed and unprinted, copperized, basis weight
10 lbs. and heavier.

Napkins, plain. Department Store Tissue, flat or quirefolded, 10 lbs. and heavier, M. G. and M. F.

Laundry Tissue, flat or quirefolded, M. G.

Laundry Sulphite, M. G.
Bottle Wraps, printed and unprinted,
basis weight 10 lbs. and heavier
Brands

"Pomona Brand" only Plant Protectors (Sage Hi-Caps) Toilet Seat Covers Waxing Tissue and other tissue specialties

CALIFORNIA-OREGON PAPER MILLS

Los Angeles, Calif. Products

Wrappings—
Manila, kraft and sulphite
Tissues—
White and colored
Fruit Wraps—
Oiled, plain and printed
Waxing Papers—
Plain and printed
Vegetable Parchment

Specialties

lills

CAPITAL ENVELOPE CO., LTD. Los Angeles

Products Envelopes, commercial and special Glassine Bags, plain and printed

CARPENTER ENVELOPE CO. Los Angeles

Products Complete line of Envelopes

CENTRAL FIBRE PRODUCTS CO. (Formerly Colorado Paper Products Co.) Denver, Colo.

Products
Manila Vat-lined Box Boards
Book Vat-lined



Paper cup manufactured by the Crystal Paper Service Company of Los Angeles.

News Vat-lined
Test Liner
Test Chip
Pasted Chip
Container Stocks
Sheathing
White Blanks
Colored Folding Box Boards
Set Up Box Boards
Plain Chip, Rolls and Sheets
Pulp Wall Boards

CERTAIN-TEED PRODUCTS CORP. Richmond, Calif.

Products

Roofing—
Mineral surfaced shingles
Mineral surfaced roll roofing
Fine surfaced roll roofing
Felts and Building Papers—
Asphalt felt, 15, 20 and 30 lb.
Saturated and coated insulating
Asphalt sheathing
Building insulator
Tuf-Tite kraft sheathing
Blue plasterboard, 30 and 60 lb.
Deadening felt, ¾, 1 and 1½ lb.
Sheathing paper, 20 and 30 lb.
Lining felt

Brands

Shingles—
Speedlay, Sealdon, Universal
Saf-T-Lok, Mul-T-Form
Roll Roofing—
Diamond Point, Super Certainteed
Certain-teed, Guard
Block Edge

COAST ENVELOPE AND LEATHER PRODUCTS CO. Los Angeles Products

Envelopes Book Covers

COLUMBIA RIVER PAPER MILLS Vancouver, Wash.

Products

Wrappings---All grades sulphite and ground wood Newsprint Fruit Wraps—
Citrus and deciduous, oiled, plain or printed
Toilet Tissues
Bleached Specialties
Sulphite Bonds
Envelope
Writings

COOS BAY PULP CORPORATION

Empire, Oregon Unbleached Sulphite Pulp

CROWN MATCH COMPANY Los Angeles

Products

Paper Book Matches

CRYSTAL PAPER SERVICE CO. Los Angeles

Products

Paper Drinking Cups Paper Souffle Cups Paper Food Containers Paper Water Bottle Caps

CROWN WILLAMETTE PAPER COMPANY

Camas, Wash.; West Linn, Ore.; Lebanon, Ore.

Products

Towels— Alfibre—Senior, Junior and Midget (folded)

Alfibre—(Roll) Aristocrat, 2-ply (folded)

Krafspun—Senior, Junior and Midget (folded)

Crown Kraft—Midget (folded) Radiant—(Roll)

Bakers Bags— Crown Satina Sulphite Bread Bags Crown Bleached Satina Sulphite Bread Bags

Bleached Sulphite Wrapping— Crown Snowfibre

Butcher Papers-

Crown Alpine Meat Wrap—S. F. White Full Bleached

Crown Meat Wrap—S. F. Natural Crest Meat Wrap—S. F. or W. F. Natural

Crest Butcher Fibre-W. F. Mottled, Natural

Crest Moistite Butcher—Dry Finish (Natural), Pink, White Crest Veribest Butcher—S. F. Pink

Citrus Tissues — Plain and Printed Crown Citrus

Colored and Striped M. G. Sulphite Wrapping— Crown Damask Alfibre—M. G. wide stripe

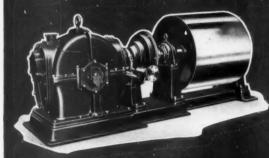
Commercial Wrapping Tissue— Crown Snowtex Tissue — Full Bleached White

Crown Velvetex Tissue—Unbleached-White and Manila

Crestex No. 2 Tissue—Unbleached White and Manila

STAR PERFORMERS

MODERN PAPER MACHINE DRIVES



BAGLEY & SEWALL



Built in Sizes to Meet Every Requirement



Pacific Coast Representative: R. T. PETRIE, 3206 N. E. 42nd Avenue, Portland, Oregon

RY

Converting Kraft— Crown Grocery Bag Paper Crown Envelope Kraft Crown Gumming Kraft Crown Asphalting Kraft Crown Waxing Kraft Drawing Manila— Crown Drawing Manila

Envelope Manila-Crown Envelope Manila Excelsior Paper-Crown Tissue Excelsion

Fruit Papers -Plain and Printed-Crown Satina Fruit Wrap Crown Alfibre Fruit Wrap Crown Bleached Alfibre Fruit Wrap Crownoil Unbleached Alfibre Fruit Wrap

Crownoil Unbleached Alfibre Fruit Wrap

Copperized Alfibre Fruit Wrap
Crown Tomato Wraps—M. G. or M.
F.—Pink, White or Manila
Crown Cantaloupe Wrap—Treated
Pink or Manila

Grocery Bags-Crown Kraft-S. O. Otter, Reliance, Eagle—S. O. Monarch—Striped M. F. Kraft—

Maydwell—Gray Kraft—S. O. Bee—Unbleached Sulphite—S. O. Commander Kraft—Sq. Pure Fibre—(Unbleached Sulphite) -Sq.
Gummed Tape-

Crown Gummed Tape Crest Gummed Tape Ham Wraps

Crown Ham Wraps Kraft Wrapping-

Crown XX Kraft Golden Brown, M. F. Plain Crown XX Corduroy Kraft, Brown, M. F. Striped

Kraft-Natural Brown, M. F. Plain

Crown Kraft-Silvertone Gray, M. F. Plain
Crown XX Damask Kraft—Golden

Brown, M. G. wide stripe Crown Damask Kraft — Natural

Brown, M. G. wide stripe Crown Damask Kraft — Silvertone Gray, M. G. wide stripe Crown Satina Kraft—Natural Brown,

M. G. narrow stripe
Crown Satina Kraft — Silvertone
Gray, M. G. narrow stripe

Manifolding Paper— Crown Manifolding Tissue

Manila Wrapping-Crown Manila Crown Manila (Bakers 20 lb.)

Mill Wrappings-Crown Mill Wrapper

Napkins-Embossed, Genuine Crepe, Semi-crepe, Full Bleached Napkins Fixture and Special-fold Napkins Package Napkins — Full Bleached and colors

Newsprint-Standard News (rolls) Standard News (rolls)
Commander News (sheets)
Crown Printers Roll News
Crown Printers Sheet News
Crown Flat-bed Sheet News Crown Pink, Green and Peach News

Odd Bags-Crown Merchandise Bags Crown Notion Bags Crown Millinery Bags Crown Garment Bags Crown Banana Bags Crown Barrel Bags Crown Poultry Bags Crown Sugar Bags

Crown Nail Bags Crown Confectionery Bags Crown Laundry Bags Crown Shopping Bags

Roll Toilet Tissue-10-Lb. Fourdrinier Tissue-750-1000

and 2000 count

10-Lb. Fourdrinier Tissue—650-750-1000 and 2000 count 10-Lb. Fourdrinier Notched Oval Tissue - 400 count - 7 and 8oz. rolls

12-Lb. Full Bleached Tissue—1000

count 12-Lb. Unbleached - Semi-crepe

-650 count 16-Lb. Unbleached — Semi-crepe— 4-5-6-7 and 8-oz rolls Full Bleached Genuine Water Crepe

-6-7-8 oz. rolls Semi-Bleached Genuine Water Crepe

-6-7-8-oz. rolls

Specialty Bags-Plain and Printed-Crown Raisin, Prune, Peach and Fig Bags Raisin Tray

Crown Sunbeam Raisin Tray Salesbook Manilas Crown Salesbook Manila Imitation Greaseproof— Crown XX Sulpar Crest Parchspun

Sulphite Box Liners Crown Water Crepe Box Liners
—Pink, Blue and White
Crown Machine Crepe Box Liners—
Pink, Blue and White
Crown Uncreped Box Liners—Pink,
Blue and White

Sulphite Wrapping-Crown Manila Crown Alfibre Crest Alfibre

Tire Wraps— Crown Tire Wraps Waxing Sulphite Crown Opaque Bread Wrap Crown Bleached Waxing Sulphite

Waxing Tissue-Crown Snowtex Waxing Tissue Crestex Waxing Tissue



A display of paper products manufactured by the Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, in a show window of Meier & Frank Department Store in Portland, Oregon >>> In the background appears a photograph of the West Linn mill of Crown Willamette.

Quality? SULPHITE PULP

PUGET SOUND PULP&TIMBER COMPANY BELLINGHAM, WASH.

DOMESTIC & EXPORT

Waxed Papers—
Crown Waxfibre
Crest Waxfibre
Florist Tissue
Waterproof Paper (Laminated)—
Crown Sealtite Kraft

CROWN WILLAMETTE PAPER CO. Los Angeles

Products
Self-opening Grocery Bags (Otter
Kraft)
Fruit Wraps, plain and printed

CRYSTAL PAPER SERVICE CORP.

Products
Paper Drinking Cups
Paper Souffle Cups
Paper Food Containers
Water Bottle Caps

n

Los Angeles

HAL DE WAIDE Portland, Ore.

"Slip Away" Toilet Seat Covers

\mathbf{E}

ENVELOPE MANUFACTURING CO. Los Angeles

Products
All types of Envelopes

EVERETT PULP & PAPER CO. Everett and West Tacoma, Wash.

Products
BOOK PAPERS

Everett English Finish Book, White, India, Yellow, Blue, Pink, Green, Orange
Nautilus E. F. Book, White
Symphony E. F. Book, White
Masterpiece Book (25x38-50 and heavier,) White
Everett Super Book, White, India
Nautilus Super Book, White, India
Nautilus Super Book (English Finish)
White, India
Everett Monastery Text (Eggshell,)
White, India
Nautilus Eggshell, White
Anchor E. F. Book, White
Einsign E. F. Book, White
Einsign E. F. Book, White
Everett Super Rotogravure, White
Everett Super Rotogravure, White
Everett Soap Wrapper (Alkali Proof),
White

Everett Soap Wrapper (Alkali Proof), White Everett Non-Fading Poster, White, Orange

LABEL AND LITHOGRAPHIC PAPERS

Litho Poster, White
Everett M. F. Label, White
Everett Super Label, White—Regular
Everett Super Label, White — Tub
Sized
Everett Super Label, White — B
Finish—Regular
Everett Super Label, White — B
Finish—Tub Sized

OFFSET PAPERS

Biplane Book (No. 1 Offset) White— Tub Sized
Twinphase Book (No. 2 Offset)
White—Tub Sized

WRITING PAPERS

Everett Railroad Writing (O.P.S.)
White, Amber, Blue, Pink, Green
Everett Penmanship Writing (M
Grade) White
Everett No. 4 Opacity Bond White,
Canary, Buff, Blue, Pink, Green
Everett Stadium Bond (Surface
Sized) White, Canary, Buff, Blue,
Pink, Green, Goldenrod

MIMEOGRAPH PAPERS

Everett Signwell Mimeo (152X Hard Sized) White Wove, Blue, Pink, Canary, Buff, Green, Goldenrod Everett Laid Mimeo (Slack Sized) White, Blue, Pink, Canary, Buff, Green, Goldenrod Everett No. 4 Mimeo Bond (Hard Sized) White, Wove Anchor Laid Mimeo (Slack Sized)

White Anchor Wove Mimeo (Slack Sized or Sized) White

Binnacle Laid Mimeo (Slack Sized) White Binnacle Wove Mimeo (Slack Sized or Sized) White

TABLETS AND STATIONERY

Li-Rite Coil Wire-bound Notebooks, Tablets, Pads, Composition Books Notebooks and Fillers Opaque School Papers Drawing Papers West Trade Commercial Stationery Federal Reserve Perforated Pads West Trade Columnar Pads Adding Machine Paper

Products

Book Papers—

Machine Finished Book, white, India, yellow, blue, pink, green, orange
Nautilus M. F. Book, white
Symphony M. F. Book, white
Masterpiece Book (25x38-50 and heavier), white
Super Book, white, India
Nautilus Super Book, white
Symphony Super Book, white
Art Book (English finish), white,
India
Monastery Text (eggshell), white,
India
Nautilus Eggshell, white
Anchor Book (M. F.), white
Binnacle Book (M. F.), white
Super Rotogravure, white
Soap Wrapper (alkali proof), white
"Hard-Wear" Catalogue (25x38-40
and heavier), white
Non-Fading Poster, white, orange

Label and Lithographic Papers—
Litho Poster, white
M. F. Label, white
Super Label, regular, white; tub
sized, white
Offset Papers—
Biplane Book (No. 1 offset) White
(Tub Sized)
Twinphase Book (No. 2 offset)
White (Tub Sized)
Writing Reports

Writing Papers—
Railroad Writing (O. P. S.), white, amber, blue, pink, green
Penmanship Writing (M Grade), white
No. 4 Opacity Bond, white, canary, buff, blue, pink, green, goldenrod.
Stadium Bond (surface sized), white, canary, buff, blue, pink, green, goldenrod

Mimeograph Papers-

Signwell Mimeo ("152X" hard sized), white wove, blue, pink, canary, buff, green, goldenrod #3 Mimeo Bond (hard sized) Anchor Laid Mimeo (slack sized), white Anchor Wove Mimeo (slack sized or sized), white Laid Mimeo (slack sized), white

Laid Mimeo (stack sized), white
Tablets and Stationery—
Li-Rite Coil Wire-bound Notebooks.
Tablets, Pads, Composition Books,
Notebooks and Fillers
Opaque School Papers
Drawing Papers
West Trade Commercial Stationery
Federal Reserve Perforated Pads
West Trade Columnar Pads
Adding Machine Paper
Fluorate, board where not other

("Everett" brand used where not otherwise noted.)

FIBREBOARD PRODUCTS, Inc. Port Angeles, Sumner, Wash. Los Angeles, Stockton, Antioch, Calif.

Products

Boxboards-

Boxmakers Grades Tagboard Bristol Board Binders' Board Kraft and Jute Liners Corrugating, Rag, Straw and Sulphite Board

Paper Cans: Tubes—
Paper Cans
Coffee Cans
Special Cottage Cheese Cans
Drug Cans
"White-Tite" Cans
Double "White-Tite" Cans
Paper Caps and tin ends of all descriptions
Mailing Tubes
Telescope Mailing Tubes
Screw Top Mailing Tubes
Kraft Tuck-end Mailing Tubes
Fluted Ice Cream Dishes

Egg Packing—
6x6 Fillers
Egg Cartons, 3x4 and 2x6
"Cushion - Pak" Egg Cartons, 3x4
and 2x6
Egg Case Flats

Folding Cartons
Raisin and Dried Fruit Cartons
Tea and Coffee Cartons
Cereal Cartons
Display Cartons
Butter and Ice Cream Cartons
Miscellaneous Folding Cartons

Corrugated Products—
Corrugated Rolls
Photo Mailers
"Super-Test" Corrugated Shipping
Cases
Milk Cases
Coffee Cases
Beer Cases

Beer Cases Wine Cases Glass Cases Miscellaneous Cases Cereal Cases Butter Cases Display Stands

Solid Fibre Products—
"Super-Test" Solid Fibre Shipping
Cases

Fruit and Vegetable Cases Cannery Cases Dried Fruit Cases



Part of a large fleet of Elwell-Parker Trucks at the Soundview plant. All these Trucks loaded, pass through mill doors.

The fork truck will load a boxcar with baled pulp in 50 minutes.

There Is No Middle Ground



Either you move at each trip a larger tonnage, at faster speed, and for less than your former cost, or—you are accumulating a deficit in your materials handling operations that will have to be absorbed out of net profits, or not absorbed at all.

Material handling in the Pulp and Paper Industry accounts for an important share of the total production cost. It is either a profit-saving activity or an unjustified waste. There is no middle ground.

Elwell-Parker knows how to build such efficient and modern systems for handling pulp and paper that these usually pay their whole original cost in a year or less.

The picture at the top shows an ideal installation at the Soundview Pulp Company's mill at Everett, Washington, where additional storage capacity was obtained by use of the Elwell-Parker high-fiering truck making it feasible to pile pulp bales 3 high throughout the entire warehouse.

The photograph at the left shows an Elwell-Parker telescopic fork truck piling roll news print 3 rolls high in a warehouse of the Washington Pulp & Paper Corporation at Port Angeles, Washington.

Elwell-Parker Engineers, specialists in modern plant transportation of pulp and paper, will gladly call upon you. Their experience should be available and your request will not obligate you. The Elwell-Parker Electric Company, 4231 St. Clair Avenue, Cleveland, Ohio.

SEATTLE . . . COLBY STEEL & ENGINEERING CO.

456 Central Bldg., Telephone: ELiot 5722

SAN FRANCISCO . . . IRA G. PERIN

200 Davis St., Telephone, SUtter 1476 • Also Los Angeles

New-ELWELL PARKER trucks

ESTABLISHED 1893 . BUILDING POWER INDUSTRIAL TRUCKS SINCE 1906

RY

ole

Salmon Cases
"Re-file" Cases
Butter Cases
Miscellaneous Cases
Cereal Cases
Soap Cases
Liquor Cases

Pails—Food Pails
Ice Cream Pails

Commodity Folding Boxes—
Cake Boxes
Cake Circles
Candy Boxes
Florist Boxes
Clothing Boxes
Laundry Boxes
Hat Boxes
Millinery Boxes
Collar Bands

Fruit Packing—
Berry Baskets
Liners—Corrugated and Chip
Pads—Corrugated and Indent
Collars
Fig Trays
Fig Partitions
Fruit Baskets
Peach Shims
Orange Shims
Basket Shims
Shims—Plain and Combination
Basket Circles
Tree Bands
Labels

F

FIELD-ERNST ENVELOPE CO.
San Francisco
Products
Printed and Plain Business Envelopes
for mailing and filing

FIR-TEX INSULATING BOARD CO. St. Helens, Ore. Insulating and Acoustical Board

LLOYD A. FRY ROOFING CO. Compton, Calif.

Products
Asphalt Roll Roofing
Asphalt Slate Surface Shingles
Slate Roll Roofing

G

GATES PAPER CO., LTD.

Los Angeles

Products

Round Fibre Cans Mailing Tubes of all types Paper Cores

GRAYS HARBOR CORPORATION Hoquiam, Wash.

Products
Sulphite Bonds
Mimeograph
Manila
Writing
Offset
Specialties

GRAYS HARBOR PULP & PAPER CO. Hoquiam, Wash. Products

Bleached Sulphite Pulp

H

HAWLEY PULP & PAPER CO. Oregon City

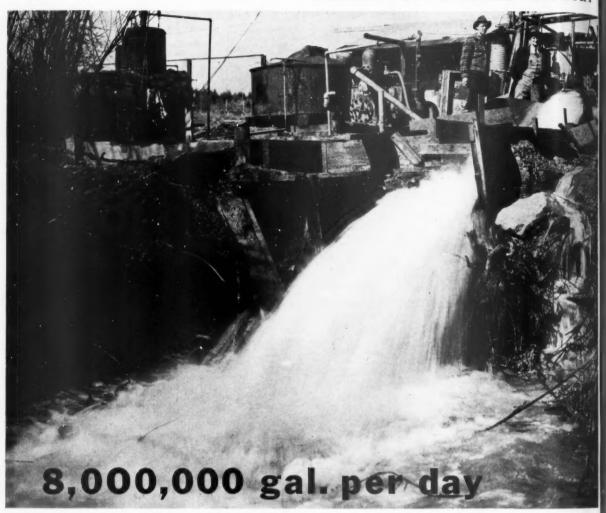
Products

Newsprint— Standard shade and blue white Rolls and sheets, all grades Poster Paper
Railroad Manila
Drawing Manila—Standard colors
Sulphite Wrapping—
Cheviot wrappings and bristol in
blue, green, orange, red, brown
and gray
Meat wraps in bleached manila and
Cheviot colors
Tailors pattern in black and green
Bakers' Manila
Macaroni Papers
Sulphite Screenings



Photo by U. S Forest Service.

A Western hemlock stand containing occasional Douglas fir and Sitka spruce, near Elsie, Oregon » » » Many small hemlock trees are growing in the shade of the stand » » » The larger trees range from 30 to 36 inches in diameter at breast heighth.



Number 4 Well, completed April 1, 1937, for Rainier Pulp and Paper Co., Shelton, Wash. Write for illustrated booklet "Large Scale Development of Water for Municipalities, Utilities and Industries."

Developed by Jannsen

Do You Wish to Increase Your Present Water Supply?

N. C. Jannsen increased the flow of the above well from 2,000,000 gallons per day to 8,000,000 gallons per day without effecting the draw down of 54 feet. He can increase the flow of *your* wells — or develop *new* wells in your city.

Many municipalities have obtained domestic water supplies through the work of N. C. Jannsen Drilling Company at costs as low as one-sixteenth that of a gravity system.

Before you spend your funds for any water system or development project, find out how you can save startling sums with an efficient, never-failing, filtered ground-water system.

Let us visit your site, give you our opinion as to the possibilities of producing water from wells in your community, furnish preliminary estimates—at no charge. When you retain us we will guarantee on a water-or-no-pay basis. Write, wire or phone us immediately.

Some of the Municipal and Industrial Development by N. C.

	Jannsen Drilling Con	mpany:
N	o. Wells Ga	lons per Day
4	City of Tacoma	22,000,000
4	Rainier Pulp & Paper Co	20,000,000
9	City of Olympia	7,000,000
5	City of Centralia	5,500,000
1	Fleischmann, Sumner	3.500,000
1	City of Shelton	2,000,000
2	State of Washington, Medica	1
	Lake	2.000,000
2	City of Blaine	2,000,000
1	City of Toppenish	2,000,000
4	Irrigation, Cold Creek	
	(Artesian)	6,750,000
1	City of Coupeville	1.500,000
1	City of Grandview	1.500,000
	City of Davenport	1.500,000
1	City of Bucoda	1.000,000
î	City of Wapato	1.000.000
î	Pierce County Airport	1.000,000
î	City of Ritzville	1.000,000
î	City of Cheney	
	City of Chency	

Factory Representatives of the LAYNE & BOWLER DEEPWELL TURBINE PUMPS

N. C. JANNSEN DRILLING CO.

P. O. BOX 3181

SEATTLE, WASH.

9107 EAST MARGINAL WAY



A Gates Paper Company paper can.

Deciduous and Soft Fruit Wrappers Tissue Paper, bleached and unbleached

Cheviot Tissues, blue, green, orange, red and tan
Toilet Tissues

Cover Paper, ten fast-to-light colors Towels, interfolds and rolls

Grocery Bags

Kraft Wrapping Paper, No. 1 and No. 2

H

EVERETT M. HURST & CO. Portland

Products
Toilet Seat Covers

I

INLAND EMPIRE PAPER CO. Millwood, Wash.

Products

Newsprint— Rolls and Sheets White, cream, colors

High Grade News— Special halftone and magazine

No. 1 Colored Poster Mimeograph News— Laid and wove White and six colors

Sub. 16, 20 and 24 Coarse Papers— Car Linings Screenings Ham Wrap Sheathing

C.

.

Day 0,000 0,000 0,000 0,000 0,000

WAY

No. 4 Bond in white and colors Mimeo Bonds

No. 4 Ledgers

Eggshell Book English Finish Book M. F. Book

Envelope—
Fibretint Envelope
Wrapping—
Fibretint Wrapping
Empire Butchers Bleached
Butchers Sulphite
Fibretint Butchers
Butchers Manila
Inland Kraft Wrapping
Sulphite and Groundwood Special-

J

THE JAITE COMPANY Plants: St. Helens, Ore. Wilmington, Cal.

Offices: San Francisco Products Multiwall Sewn Paper Bags

· FNUELORE CO

JOHNSON ENVELOPE CO. San Diego, Calif.

Products

Catalog Envelopes
Expanding Envelopes
File Folders
Filing Envelopes
Mailing Envelopes
Merchandise Envelopes
Photo Mailers
Tag Envelopes

JOHNS-MANVILLE, Inc. San Francisco

Products

Building Papers—

Asphalt Saturated Felts — Asphalt Saturated Rag Felt, No. 15, and No. 30

Asphalt Sheathing

Kraft Sheathing

Rosin Sized Sheathing Paper and Deadening Felt—¾-lb., 1-lb., 1½lb. per sq. yd.

Blue Plaster Board

Asbestos Built-Up Roofing Felts

Roofing-

Asphalt Roll Roofing Smooth Surfaced; light, medium and heavy weights, with trade names: Modern Edge, Diamond Point, Split Sheet, Pilot and Planet

Slatekote Roll Roofing Asbestos Roll roofings



The Gates Paper Company of Los Angeles produces round fibre cans and mailing tubes of all types.

85% Magnesia
Asbestocel
Anti-Sweat
Asbesto-Sponge Felted
Banroc
Wool Felt
Superex, Superex Composition
Zero
Fire Felt
Slatekote Shingles
Asbestos Roofing Shingles
Asbestos Siding Shingles
Asbestos Paper and Millboard—Flat
Asbestos and Paper in various widths
and weights
Corrugated Asbestos Paper
Flat Sheets in various grades and
thicknesses

Composition Shingles-

Pipe Coverings—
Asbestocel Pipe Covering
Asbesto-Sponge Felted Pipe Covering
Wool Felt Pipe Covering
Transite Flue Pipe
Industrial Flooring
Decorative Asphalt Tile Flooring
Asbestos Wainscoting Flexboard
Insulating Board and Decorative
Ceiling Tilem

L

Steeltex Welded Wire Fabric

LONGVIEW FIBRE COMPANY Longview, Wash.

Products

Board—
Sulphate Test Liner
Sulphate Corrugating Board
Kraft Boxboard

Paper-

Plain and Watermarked machineglazed Kraft Wrapping Plain and Watermarked machineglazed Kraft Bag Papers Watermarked machine-glazed Soap Wrappers

Machine-glazed Envelope Kraft Papers

Machine-glazed and fourdrinier Tire Wrap Fourdrinier machine finished Wrap-

ping Papers
Fourdrinier machine finished Butchers' Papers

Fourdrinier machine finished Bag Papers Fourdrinier machine finished Cartridge, Powder and Shell Papers

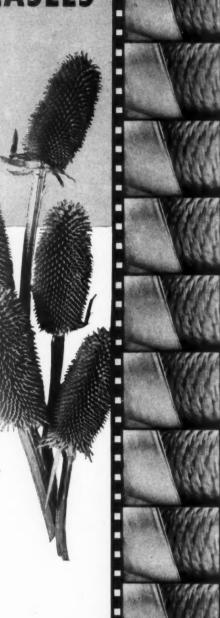
BAGS—(Plain or Watermarked, machine-glazed or machine-finished, printed or unprinted)—
Grocery Bags
Millinery and Notion Bags
Garment Bags
Barrel Bags
Poultry Bags
Nail Bags
Laundry Bags
Shopping Bags
Bread Bags
Bread Bags

Sugar Bags Raisin Bags Bag Specialties

Containers— Solid Fibre Shipping Containers Corrugated Shipping Containers

Folding Boxes— Clothing Boxes Laundry Boxes Cake Boxes

TEASELS



CAUGHT NAPPING

(Close-up of a strip from Kenwood's new Talking Picture)

It's the <u>costliest</u> way to nap

... but even Kenwood

can't improve on

Nature!

A perfect paper-finish requires perfect napping of the felt. For this purpose, nothing has ever been found to equal teasels—dried seed pods covered with small spines that end in tiny pliable hooks. When these hooks come in contact with the fabric, they catch and gently raise the nap, then spring back again without tearing the fabric or breaking the fiber of the wool. Kenwood skilled craftsmanship plays an important part in the delicate operation of napping Kenwood Felts.



F. C. HUYCK & SONS

MAY • 1937

RY

. Y.

Millinery Boxes Folding Box Specialties

Waxed Paper Products— Waxed Papers Waxed Butter Cube Bags Waxed Specialties

Asphalted Paper Products—
Duplex Waterproof Kraft Sheathing
Paper
Duplex Waterproof Kraft Car
Liner
Duplex Waterproof Kraft Egg Crate
Liner Bags
Duplex Waterproof Kraft Poultry
Box Liner Bags
Asphalted Specialties

Creped Paper Towels & Creped Specialties-

L.A. ENVELOPE MANUFACTURING CO. Los Angeles

Products
Business Envelopes
Catalog Envelopes
Special Size Envelopes

LOS ANGELES PAPER BAG CO. Los Angeles

Products
Bag Printing, all kinds
Glassine Bags
Grocery Bags
Garment Bags
Gum Tape
Napkins
Notion and Millinery Bags
Pliofilm Bags, flat, square and satchel bottom

LOS ANGELES PAPER MFG. CO. and, or El Rey Products Co.

Los Angeles

Products

Asphalt Roofing
Asphalt Slate Surfaced Shingles
Composition Shingles
Saturated Lining Felt
Saturating Felt
Deadening Felt
Red and Gray Duplex Sheathing
Car Linings
Industrial Floorings
Dry Felts
Metallic Surfaced Roofing

N

NATIONAL CARD, MAT & BOARD COMPANY

Los Angeles

Products

Artists Illustration Board
Backing Board
Embossed Boards
Linen Finish Boards
Calendar and Photo Mount
Card and Mat Board Products
Coated Board
Cover Papers
Display Cases and Easels
Greeting Card Stock
Illustration Boards and Bristol
Paper Board Specialties
Pasted Board
Picture Backing Board
Poster Board and Paper

NATIONAL PAPER PRODUCTS COMPANY

Port Townsend, Wash.

Products

.016 Kraft Liner Board .030 Kraft Liner Board .016 to .038 Suit Box Board Cement Bag Paper Grocery Bag Paper Kraft Wrapping Paper

0

OLYMPIC FOREST PRODUCTS CO. Port Angeles, Wash.

Products Bleached Sulphite Pulp

OREGON PULP & PAPER CO. Salem, Ore.

Products

White and Colored Bond
Writings
Envelope
Ledger
Mimeograph
Glassine, greaseproof—
Bleached and unbleached
Specialties
Manifold
Parchment

OWENS-ILLINOIS PACIFIC COAST COMPANY

San Francisco

Products

Corrugated Shipping Cases (1) Corrugated Fruit Box Pads Liners and Collars (2)

Brands

(1) OnIzed (2) No-Bruz



This bill board won honorable mention for the Westminster Paper Company of New Westminster, B. C., whose successful advertising campaign keynote is the appeal of softness and protection.

PAC



The FLAKT DRYER

THE NEW PATENTED DRYING MACHINE FOR PULP
GIVES SOMETHING NEW TO PULP INDUSTRY

FLAKT is an ancient word that means something pleasant which gives comfort. To pulp it means a mild drying, higher quality and to the management it means less expenses and increased profit.

FLAKT dried pulp is very easy to dissolve, does not lose color or strength and gives 20-40% saving in steam cost.

St. Regis Kraft Company installed two FLAKT Dryers on this continent and other machines will be operating at the end of this year at Bellingham, Washington, Woodfibre, B. C., and Cornwall, Ontario. These are only a few examples out of a hundred installations in ten different countries on three continents.

The FLAKT DRYER Is Developed by

AB SVENSKA FLAKTFABRIKEN

STOCKHOLM, SWEDEN

Represented in

The EAST by Paper Machinery, Ltd., Montreal, P. Q. The WEST by A. H. Lundberg, 3311 1st Av. S., Seattle, Wash.

RY

PACIFIC COAST ENVELOPE CO. DIVISION

San Francisco

Products

Printed and plain envelopes for mail-ing and filing

PACIFIC COAST PAPER MILLS Bellingham, Wash.

Products

Toilet Tissue Bleached, Manila and white roll Interfolded and Flat Pack

Printed, colored, embossed Flat, quarter-fold, eight-fold Dispenser fold

Towels-Bleached Kraft, Sulphite Towels Kraft, and unbleached

Brands M. D. Tissue, etc.

PACIFIC MILLS, LIMITED Ocean Falls, B. C.

Converting Plant, Vancouver, B. C. Newsprint Kraft paper, M. F. and M. G. plain and striped Butchers Manila Sulphite tissues

Toilet tissue Napkins Fruit Wraps Towels Bread Wraps Printed Wrapping

Plain and printed waxed papers Kraft and Sulphite specialties

PACIFIC NORTHWEST PAPER MILLS, Inc.

Portland

Safety Paper Adwrap Decorated Wrappings Specialties

PACIFIC STRAW PAPER & BOARD COMPANY

Longview, Wash.

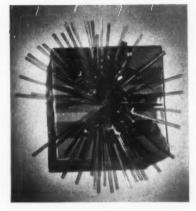
Products

Combination Board Plain Chip Board Solid News News and Manila Lined Bleached Manilas Mist Gray and Colored Boards Container Board Test Board White Patent Coated Board Solid Pulp Board Egg Case Filler Tag Boards Folding Boxes

PACIFIC WAXED PAPER CO. Seattle, Wash.

Products

Bread Wrappers, plain and printed Waxed Carton Wrappers Lettuce and Vegetable Crate Liners



Box wrapped in "Cellophane" and embellished with "Glassips" and "Cellophane" ribbon trim. The Paper Supply Company of Los Angeles are converters of "Cellophane" and transparent cellulose films cellulose films.

Transparent Cake and Cookie Wrap-

Butcher and Packers Waxed Paper General Line for Cracker and Biscuit Companies

PALMER-LUSE ENVELOPE CO.

Los Angeles

Products

Greeting Card Envelopes Wedding Announcement Envelopes Baronial Type Envelopes Commercial Envelopes

PAPER SPECIALTY CORP. Portland

Products

Shamrock Brand Wax Lined Food Trays

PAPER SUPPLY CO. Los Angeles

Products

Resale Rolls of-Shelf Paper Tissue Paper Holly Paper Decorative Wrappings Cellophane Distributors:

Cellophane Ribbons Glassips Cellophane Soda Straws, all colors for hot or cold beverages

PARAFFINE COMPANIES, INC. Emeryville, Calif.

Products

Roll Roofing Building papers Sheathing papers Car linings Mulch papers Pipe wrappings

Brands

Pabco brand on all

PIONEER DIVISION THE FLINT-KOTE COMPANY

Los Angeles, Calif.

Products

Roofing Division

Rag Roofing—Dry Felt, all weights, 12 to 108 lbs.

Asphalt Yosemite Rock Surfaced Shingles

Asphalt Emulsion Rosin-sized Sheathing Blue Plasterboard K-B Asphalt Sheathing

Insulating Papers Asphalt Products, Paints, etc.

Mulch Papers Pipe Wrap Coverings

Car Lining Papers Duplex Kraft Sheathing Asphalt Saturated Felt

Box Board Division

Pioneer Super White Patent Coated Box Board

Pioneer Super Manila

Pioneer Super Mist Grey and all colors Pioneer Super Suit Box Boards

Pioneer Super Poster Card Board Pioneer Black Ebonkote Board

Pioneer Show Print Board Pioneer Solid News Board

Pioneer Kraft Board Liners

Pioneer Jute Board Liners

Pioneer Pasted Chip Pioneer Colored Manila Lined Boards

Pioneer Bleached Manila Lined Boards Pioneer Book Lined Chipboard

Pioneer News Lined Chipboard

Pioneer Shirt Boards Pioneer Division Boards

Pioneer Fruit Box Liners Pioneer Fruit Box Shims

Pioneer Kraft Metal Lath Backing

Pioneer Plaster Board Liner (kraft)

POWELL RIVER CO., LTD. Powell River, B. C.

Products

News Print

PUGET SOUND PULP & TIMBER COMPANY

Anacortes and Bellingham, Wash.

Products

Unbleached Sulphite Pulp

R

RAINIER PULP & PAPER CO. Shelton, Wash.

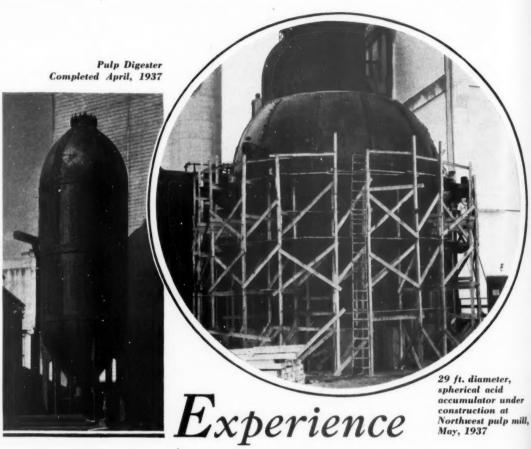
Products

Bleached Sulphite Pulp

ST. HELENS PULP & PAPER CO. St. Helens, Ore.

Products

Bleached and Unbleached Kraft Paper: Wrapping-both M. F. & M. G.



Manufacturers of . . .

Pulp Digesters
Acid Accumulators
Boilers
Pressure Vessels
Tanks
Diffusers

SINCE 1907

More than a quarter century in the manufacture and installation of plant equipment places the Commercial Boiler Works in a position to continue serving the

PULP and PAPER INDUSTRY

COMMERCIAL BOILER WORKS

53 to 81 West Lander St. on East Waterway • MAin 9127 SEATTLE, WASHINGTON

TRY

u,

ne

3

MAY

Gumming
Waxing
Bag
Butchers
Tire Wraps—Printed or Plain
Fruit and Canteloupe Wraps
Box Liners
Toweling
Tissue
Waxed Paper

ST. REGIS KRAFT CO. Tacoma, Wash.

Products Sulphate Pulp — Bleached and Unbleached

SALINAS VALLEY WAXED PAPER COMPANY

Spreckels, California Waxed Lettuce Crate Liners Waxed Specialties

SANI-GARD COVER CO. Los Angeles Plants at Portland, Ore., and Los Angeles

Products
Paper Toilet Seat Covers

SCHMIDT LITHOGRAPH CO.

San Francisco

Products

Corrugated Shipping Cases Fruit Box Pads and Liners Corrugated Advertising Cutouts Coated Papers for Labels

SHAFFER PULP COMPANY Tacoma, Wash. Unbleached Sulphite Pulp

SHERMAN PAPER PRODUCTS

CORP.
Los Angeles

Products

Baking Cups
Fluted Cake Pan Liners
Die Cup Liners
Labels
Printed Gummed Cake Bands
Cake Rounds
Corrugated Glassine Products
Embossed and Printed Glassine Doilies
White Waxed Corrugated Circles
Spruce Cake Rounds

SIDNEY ROOFING & PAPER CO., LTD.

Victoria, B. C.

Products

Box Board Test Board Felts Building Paper Roofing

SOUNDVIEW PULP CO. Everett, Wash.

Products Bleached Sulphite Pulp

SPAULDING PULP & PAPER CO. Newberg, Ore.

Products
Unbleached and Bleached Sulphite
Pulp

STEWART PAPER PRODUCTS CO. Hoquiam, Washington

Adding Machine Rolls Cash Register Rolls Memo pads

T

THE TISSUE CO. Camas, Wash.

Products
Bulk and Packaged Napkins



The Everett Pulp & Paper Company's busy finishing and packing room.



of ESCO

STAINLESS

... Fittings in any range of sizes to meet your requirements are available in all standard patterns

Special designs developed for special services in pulp and paper mills

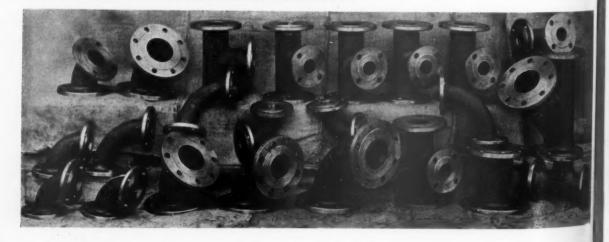
Our engineers are at your service



ELECTRIC STEEL FOUNDRY
COMPANY

Portland, Oregon

Seattle, Washington



in MLESS 45 14 13 RY

Izes

are

erns

d

p

DRY

nington

I

UNION BAG & PAPER CORP.
Los Angeles
Converting Plant

Products

Grocery Bags, Sulphite and Kraft.
Glassine Bags.
Candy Bags.
Notion and Millinery.
Waxed Bags.
Coffee Bags, Plain and Fancy Printed.
Nail Bags.
Transparent Cellulose Bags (cellophane and sylphrap).
Egg Crate Liners.
Coffee Bag Shipping Containers.
Special Bags of Varied Nature.
Printed Bags—one to 5 colors.

UNIVERSAL PAPER GOODS CO.
Los Angeles
Products

Special Envelopes Filing Containers

U. S. GYPSUM CO. Southgate, Calif.

Products
U. S. G. Asphalt Shingles
Thatch Point Roll Roofing
Star Slate Roofing
Star Corrugated Roofing
Starco Roofing
Cascade Roofing
Gold Star Roofing
U. S. G. Asphalt Saturated Felts
U. S. G. Saturated Sheathing
Starkote Coated Felt
Kraft Sheathing Paper
Deadening Felts
Duo-Colored Sheathing Paper
Blue Plasterboard
Asbestos Felts
Base Sheets
White and Black Top Cap Sheets
Sheetrock
Rocklath
U. S. G. Roof Coatings and Cement
U. S. G. Asphalt Emulsions

U. S. TISSUE CONVERTING CO.
Los Angeles
Products

Tissue Garment Bags Clothing Boxes

V

VOLNEY FELT MILLS Compton, Calif. Products

Dry Roofing Felt

VANCOUVER KRAFT MILLS Port Mellon, B. C. Unbleached Sulphate Pulp

W

WASHINGTON PULP & PAPER CORPORATION
Port Angeles, Wash.

Newsprint Products

WEST COAST PAPER PRODUCTS CO.

Portland

Products Bottle Caps

WESTERN MANUFACTURING & SUPPLY CO.

Los Angeles

Products

Printed Gummed Sealing Tape Special Gummed Tape in rolls Gummed Labels, Printed and Perforated, in sheets and rolls Eveready Sealers



FOR LOAF CAKES



FOR OVAL CAKES



FOR RING CAKES



FOR ANGEL CAKES

The Sherman Paper Products Company of Los Angeles makes a variety of cake dishes of paper for Pacific Coast bakers. WESTERN PAPER CONVERTING COMPANY

Salem, Ore.

Products

Adding Machine Rolls
Glassine and Confectionery Bags
Candy Bags
Cellophane Bags and Specialties
Cash Register Rolls
Aluminum Foil, printed
Greaseproof Specialties
School Papers
Wrapping Specialties
Note Books

WESTERN PAPER PRODUCTS CO.

San Francisco

Products

Special Bags of All Kinds
Mattress Bags
Furniture Covers
Casket Covers
Machinery Covers
Transparent Cellulose Bags
Creped Kraft Bags and Barrel
Liners
Die Cut and Folded Liners
Folding
Glueing
Sewing
Special Converting of Paper in All
Its Forms

WESTERN WAXED PAPER CO. Oakland, Los Angeles and Portland

Products

Waxed Papers—Printed and Plain
Waxed Paper Bags—Printed and Plain
Kleerwrap
Riegelite
Western Opaque
Butter Wraps
Bread Wraps
Candy Wraps
Transo
Shredded Waxed Paper
Icepak
Adsealit Bands
Majonnier Liners
Egg Crate Lining Bags
Gummed Tape
Lettuce Crate Kraft
Bread Wrapping Machines
Plant Covers
Waxfibre
Asparagus Wraps
Defiance Sheathing Paper

WESTMINSTER PAPER CO., LTD. New Westminster, B. C.

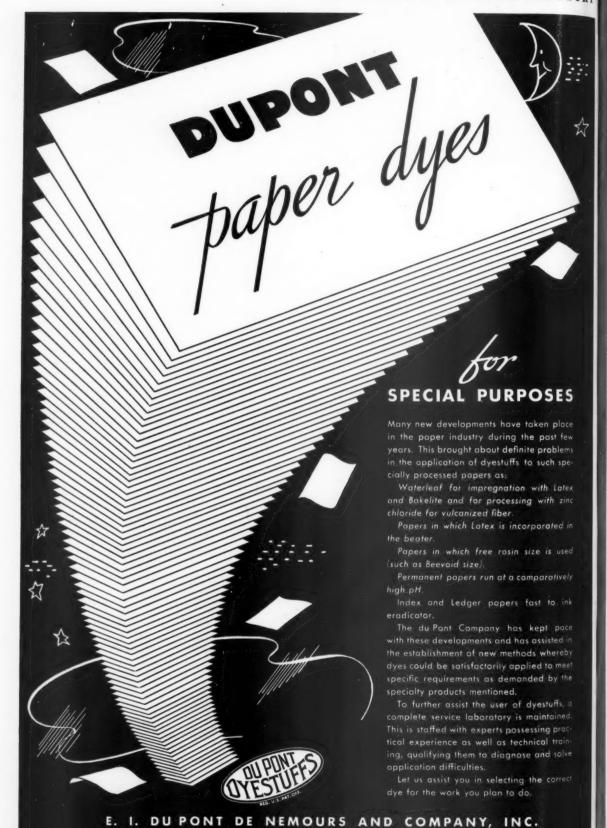
Products

Toilet Tissues—
Plain, creped, glazed
Wrapping—
Kraft and Sulphite, 15 to 40 lbs.
Vegetable Fruit Wraps—
Plain, oiled, printed
Tissues, all colors
Towels and Napkins
Waxed Paper, plain and printed
Specialties

WEYERHAEUSER TIMBER CO. Longview, Wash.

Everett, Wash.

Bleached Sulphite Pulp Unbleached Sulphite Pulp



ORGANIC CHEMICALS DEPARTMENT, DYESTUFFS DIVISION, WILMINGTON, DELAWARE

app abor phin S duri

dust sales for the

cept high proc rema pape impo pape with

an i ical 200, and bette enjo

ish 1930

been

num liver and furti It

for end had of t

S

Bure Depi Phill Prod To varie

of Vari

TRY

Trends in the Foreign Pulp and Paper Industry During 1936*

THE YEAR 1936 saw a broad Igeneral improvement in the pulp and/or paper industries of most and/or paper industries of the major foreign producing coun-tries. During the year the Swedish industry continued to extend its advance s of pulp, some even being made as far ahead as for 1939 delivery; the Canadian industry enjoyed an ex-ceptionally active year and saw a new high established for news print paper production though it is true that prices at a low level; the German paper industry witnessed a continued paper industry witnessed a continued improvement, the year ending with all paper mills in Germany well supplied with orders; the Finnish industry saw an increase in the production of chemical wood pulp amounting to almost 200,000 tons and the Norwegian paper and pulp industry closed the year in better position statistically than it had enjoyed for some time. It is true that not all of the divisions of the industry for a country prospered equally if in fact at all, yet the general tone in most cases was an optimistic one.

Many Advance Sales of Swedish Pulp

The outstanding feature of the Swedchemical wood pulp industry during 1936 was the practice of future book ings. By the close of the year remark-ably large sales of chemical pulp had been made for 1937 delivery and over a million tons had been sold for delivery in 1938. In addition to these, a number of sales contracts for 1939 devery were reported to have been made and there was an active interest in further bookings for the 1939 period. It was estimated that for 1937, fifths of the sulphite pulp production for the year had been sold before the end of 1936 and that sales contracts had been made for at least five-sixths of the sulphate pulp production for the period. The large advance sales for 1938, approximately one million tons, were about equally divided as between sulphite pulp and sulphate pulp.

Sales of mechanical pulp in Sweden during 1936 lagged considerably as compared with those of chemical pulp. Near the close of the year there was added activity in the mechanical pulp field, however, and approximately three-fourths of the contemplated 1937 production was reported to have been sold. Sales of mechanical pulp for 1938 delivery were small.

1936 Swedish Pulp Exports Showed Increase

Exports of unbleached sulphite pulp during 1936 totalled 833,252 tons as compared with 763,342 tons for 1935. Exports of bleached sulphite pulp for the year totalled 312,302 tons as comthe year totalled 312,302 tons as compared with 268,215 tons for 1935. With the unbleached sulphite item there was a very drastic decline in Italian sales due to sanctions and the Spanish marthese declines, however, France absorbed some 28,000 tons more than for the previous year and became the third previous year and became the third most important Swedish market, being outranked only by the United States and Great Britain. Bleached sulphite exports did not reveal any wide changes as to foreign markets, the United States, the United Kingdom and France remaining the leading outlets. bleached sulphite pulp the Italian and Spanish markets were not as drastically affected as with the unbleached product.

Exports of unbleached sulphate pulp totalled 732,513 metric tons during 1936 as compared with 699,948 metric tons for 1935. Bleached sulphate pulp exports totalled 69,720 metric tons for 1936 as compared with 55,995 tons for 1935. In the case of bleached sulphate pulp there was no change at all in the foreign market picture except for the larger shipments to the United States. With unbleached sulphate pulp the larger shipments to the United States almost in themselves accounted for the total increase.

Exports of mechanical pulp for 1936 totalled 580,163 metric tons as compared with 579,673 tons for 1935. Except for a drop of over 12,000 tons in shipments to Spain there was no change of importance in 1936 as compared with 1935. Near the close of the year an agreement was reached by the mechanical pulp manufacturer's group to continue the export quota arrangement for 1937 and to increase the allotment by 175,000 tons. This increase was made it was said, because of the improved market condition and the larger demand which was already manifesting itself for the 1937 output.

Swedish Paper Industry Shows Improvement

The final months of 1936 also witnessed improvement in the general position of the paper industry in Sweden. By the beginning of the new year the market was indeed quite active. It is true that increasing prices for raw materials together with higher waves were raising production costs but the industry was, in general, well provided with orders. The kraft paper producers in particular had important future business in prospect.

The long depressed newsprint paper industry saw much reason for encouragement during the final months of 1936. There was sufficient orders on hand to care for almost all of the 1937 production and too, the world consumption of the product was increasing. It is true that most of the major contracts were made at prices not particularly favorable but there was a very decided increase in prices for spot orders and for the few remaining parce's available from 1937 production.

Kraft paper continued to represent the most active portion of the industry. At the close of the year it was reported that total orders held by the mills approximated 75,000 tons compared with the 60.000 tons held at the close of 1935. Prices had increased and export activity was at a record level. Most mills were booked with orders for at least four or five months ahead.

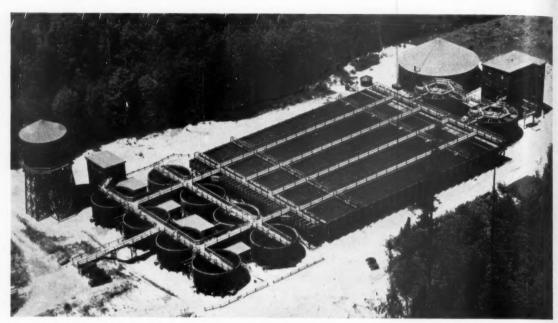
Canadian News Print Production Reaches New High

News print paper is of course the most important item produced by the Canadian pulp and paper industry. In this, while data for 1936 are not yet available, it is known that this year was no exception. As a matter of fact the newsprint paper industry enjoyed a particularly active year, having increased its production over that of 1935 by 16 percent and having reached an all-time high of 3,190,559 tons. Production statistics for 1936 on paper other than newsprint are not yet available but reports indicate that the output of all types of paper advanced during the year. The industry is not yet on a completely satisfactory financial basis but as the year closed, its views as to the future were definitely optimistic ones.

In spite of the high level of production during 1936, prices remained at a

Prepared by the Forest Products Division, Bursau of Foreign and Domestic Commerce, Onmerce, One of Commerce, Washington, D. C. Phillips A. Hayward is chief of the Forest Products Division.

This article is based upon a general analysis of conditions reported to the Bureau from its various foreign offices. No responsibility is assuad by the Forest Products Division for the correctness of details or the opinions expressed.



The 16,000,000 gallons per day water filter plant of the Pulp Division, Weyerhaeuser Timber Company at Everett,
Washington, capable of ultimate expansion to 25,000,000 gallons per day.

WATER TREATMENT **HEADQUARTERS**

PACIFIC COAST pulp and paper mills meet the Quality Standards of today with the aid of clean, pure, filtered water. Modern filtration and treatment plants, such as the one pictured above, provide a continuous supply of water, free from dirt color and slime producing bacteria.

Experience over many years in the treatment of Pacific Coast water enables the SHIBLEY COMPANY to offer the pulp and paper industry an engineering service capable of solving any water filtering or treating problem.

> Pressure Filters, Gravity Filters, Water Softeners and Boiler Water Treatment

SHIBLEY COMPANY

WATER TREATMENT ENGINEERS

1201 Textile Tower SEATTLE

SEneca 0366

low level. The Price Index of the Dominion Bureau of Statistics based on two different grades of news print paper remained unchanged at 55.4 throughout the entire year. (1926=100) In January 1937 there was a sharp increase to 58.0 in the news print paper index however, probably under the influence of year end reports of favorable activity. Commencing with this year, deliveries to the United States were put on a price basis of \$42.50 per ton.

It should be noted that during 1936, 46 percent of the rated capacity of the Canadian news print industry was owned by companies operating in receivership or under default conditions. Therefore, in spite of the greatly improved 1936 status it cannot be said that the industry returned to a prosperous level. As the year ended, three companies were in receivership, the largest of the three having an annual news print paper capacity of 689,000 tons. A second company with two mills and a capacity of 315,000 tons of news print paper and a third with an annual capacity of 165,000 tons were also in bankruptcy as the

Finnish Pulp Production and Exports Up

According to preliminary figures for 1936, Finland's production of sulphite pulp amounted to 937,740 metric tons, dry weight, as against 842,375 tons in 1935. Sulphate pulp production totalled 388,875 tons, dry weight, as against 294,096 tons for 1935. Total production of chemical woodpulp in 1936 was therefore 1,326,615 tons, dry weight, an increase of almost 200,000 tons over the 1935 figure.

Exports of chemical wood pulp for 1936 or of paper from it, accounted for between 90 and 95 percent of the total Finnish production of the item. Approximately 80 percent of the exports were of wood pulp. Of these 1936 exports 310,707 metric tons were of wet sulphite as against 256,240 tons for 1935; 602,284 tons were of dry sulphite as against 560,564 tons for 1935; 130,765 tons were of wet sulphate pulp as against 80,504 tons for 1935 and 257,855 tons were of dry sulphate pulp as against 194,947 tons for 1935. a dry weight basis there was therefore a 17 percent increase in chemical pulp exports as compared with the preceding

Exports of mechanical ground wood pulp for 1936 decreased slightly as compared with 1935, the tonnages for 1936 being 277,676 and 289,836 tons respectively. News print paper exports for 1936 increased to 342,134 tons as compared with 280,459 tons for 1935 and brown wrapping paper exports increased to 38,526 tons as compared with 34,294 tons for 1935. Exports of other kinds of wrapping paper also increased as did the exports of other kinds of paper. The average increase for all kinds of paper exported in 1936 as compared with 1935 approximated 20 percent.

German Paper Industry Improves Position

German production figures are not yet available for the entire year of 1936. There are indications however that the output of paper and board scored a substantial increase over 1935. Production for the first six months of the year showed an advance of 11 percent for paper and 6.5 percent for board over the corresponding period of 1935, and it is believed that the total for the year will emphasize rather than detract from this improvement. The output of groundwood pulp increased 7.7 percent and that of chemical wood pulp 8.8 percent during the first half of the year as against the corresponding period of 1935, and on the basis of these figures a production of 2,450,000 metric tons of paper, 600,000 tons of board, 1,350,000 tons of chemical pulp and 975,000 tons of groundwood pulp is forecast for the year. New groundwood capacity by the way, was prohibited during 1936 and the prohibition was extended to cover the year of 1937 as well.

The paper industry saw in 1936 the elimination of short-time employment and the reestablishment of regular working schedules. As the year ended all paper mills were well supplied with orders. But while the market situation ceased to worry the paper manufacturer, the raw material supply gave cause for concern in that while the pulp wood supply was ample, rags and old paper were not always available in sufficient quantities for use. Chemical pulp moreover, was being consumed in ever increasing volume by the staple fiber and explosives industries so that paper mills which were not themselves producers of wood pulp were not always able to procure the requisite quantities promptly. In order to meet this increased demand, the leading German manufacturer not only extended his own manufacturing facilities during 1936, but absorbed a large chemical wood pulp concern for the specific purpose of obtaining more sulphite pulp for the staple fiber industry. The sulphate division of the industry also underwent considerable expansion during 1936, the output of the two existing plants being increased and several new plants being projected.

The German paper industry continued its policy of vigorous trade promotion during 1936 and actually succeeded in boosting paper and pulp exports to a new high of 121,906,000 marks as against 108,663,000 marks for 1935. The corresponding imports advanced from a figure of 18,897,000 marks for 1935 to 19,139,000 marks for 1936, the bulk of which represented imports of sulphate pulp.

Norwegian Pulp Production and Exports Increase

The year 1936 closed with the Norwegian paper and pulp industry in a better position statistically than for some time. The chemical pulp and news print branches did not progress as favorably as did some others, yet there was a decided upward tendency and producers appeared to be satisfied with prospects.

Mechanical pulp production figures for 1936 are not yet available but it is believed that production for sale was substantially greater than during the preceding year. One Norwegian seller estimated that this production would approximate 580,000 tons as compared with 480,000 tons for the year of 1935. Sales for 1937 delivery were not particularly active but prices did have a distinct upward tendency. Higher timber prices and higher wages gradually forced up production costs and since it was felt that they might continue to rise for a while yet, sellers were not inclined to contract for 1938 delivery. As the year ended the market was strong and prospects were promising in that the entire mechanical pulp production of the Scandinavian countries was apparently to be disposed of at improved prices.

Within the chemical pulp group it is estimated that the production of sulphite pulp in 1936 totalled 440,000 tons as compared with 401,890 tons for the year of 1935. Sulphate pulp production increased from 60,182 tons to approximately 70,000 tons. During the last quarter of the year conditions within the industry were rather quiet and prices of bleached sulphite pulp remained steady. Unbleached sulphite pulp prices were unreasonably low compared with those for the bleached product. Unusually large quantities of chemical pulp for 1937 delivery were sold before the year ended and numerous sales were also made for 1938 delivery. It was reported that at least one order for 1939 delivery was also made.

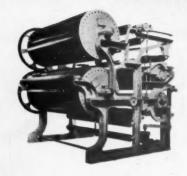
Exports of mechanical pulp rose by 12 percent during the last quarter of 1936 and by 28 percent over the corresponding period of 1935. Almost all of the increase was accounted for under "wet white" while there was no exports of "brown" in either of the last two quarters. The increase in comparison with the preceding quarter was due almost entirely to heavier shipments to Belgium, France and Great Britain.

Exports of chemical pulp in the fourth quarter of 1936 increased by 14 percent over the preceding three months but declined approximately 2 percent in comparison with the corresponding period of 1935. The improvement was spread quite evenly over all classes though "unbleached wet sulphate" showed a slight drop. Exports to the United States, Great Britain, France and Japan were higher than in the preceding quarter but with the exception of those to France and Japan, lower than in the fourth quarter of 1935.

Summary

By and large the year of 1936 saw improvement in the pulp and/or paper industries of the principal foreign producing countries with prospects for 1937 particularly favorable. This prosperity and optimism did not apply to all items within the trade obviously, but it did apply to the major ones of most every country.









SUMNER Iron Works





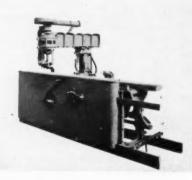
BUILDERS
OF
PULP MILL
MACHINERY





EVERETT, WASHINGTON









Other Statistical Data

UNITED STATES

Paper Board-Operation, Production, Orders'

(.012 of an inch or more in thickness)

		ion—(Inch h n last dryer v		-Product	ion—(Short	tons)—	New orders	Unfilled orders end
Year and Month—1936	Rated Capacity	Operated	Per Cent of Capacity	f Rated Capacity	Output	Per Cent of Capacity	(Short	month (Short tons)
January*	15,251,225	9,970,298	65.4	427,564	271,210	63.4	284,854	95,358
February*	14,173,988	9,682,428	68.3	396,354	271,107	68.4	268,843	91,917
March	14,583,725	10,128,474	69.5	411,199	285,257	69.4	290,854	96,202
April*	14,630,429	10,495,934	71.7	412,267	295,899	71.8	297,984	99,796
May	14 407 025	10,140,595	69.9	407,729	289,527	71.0	280,899	92,784
lune	14 545 072	10,186,905	70.0	409,510	288,682	70.5	290,098	96,402
uly*	15 057 206	10,699,561	71.1	431,139	299,033	69.4	304,747	101,557
August	14 545 073	11,122,150	76.5	416,338	319,391	76.7	332,553	117,443
September	14 466 021	11,559,779	78.5	415,126	328,519	79.1	353,197	135,732
October*	15 100 530	12,669,229	83.4	435,081	359,849	82.7	357,783	138,830
November	14 007 612	11,350,376	80.5	403,871	321,624	79.6	308,732	127,193
December	15,177,270	11,537,682	76.0	434,969	328,773	75.6	350,452	130,472
Total (Year 1936)	176,217,757	129,343,411	73.4	5,001,147	3,658,871	73.2	3,720,996	******
Total (Year 1935)		119,579,631	67.0	4,861,628	3,294,055	67.8	3,281,525	
Total (Year 1934)		105,201,235	59.5	4,767,029	2,839,705	59.6	2,807,470	
Total (Year 1933)		105,986,270	64.0	4,619,730	2,912,374	63.0	2,913,370	****
Total (Year 1932)		75,979,629	55.0	3,904,824	2,152,045	55.1	2,148,991	
Total (Year 1931)		91,894,961	67.0	3,879,836	2,556,851	65.9	2,527,024	*********
Total (Year 1930)		96,843,592	69.6	3,917,436	2,699,595	68.9	2,685,373	

"Monthly statistics compiled from data furnished by the National Paperboard Association from reports of members, and by manufacturers reporting direct to the Bureau of Census, are pesented in the above tables. These statistics were released by Director W. L. Austin, Bureau of the Census, Department of Commerce.

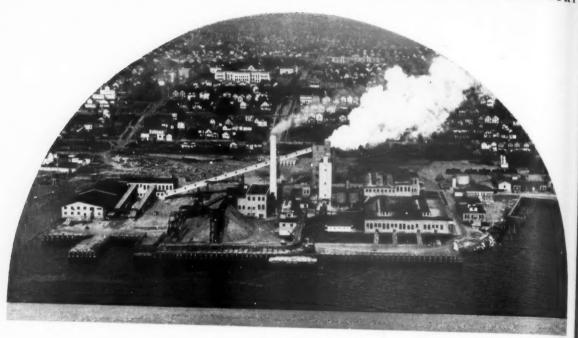
Rated (24-hour) capacity data for paperboard machines in inch hours hours in this report are based on last dryer width whereas those shown in the reports for 1932 and earlier years were based on maximum trim width. The capacity data vary according to the normal number of working days in each month.

SHIPMENTS, STOCKS AND PRODUCTION OF PAPERBOARD AND CONSUMPTION AND STOCKS OF WASTE PAPER (85 Selected Manufacturers)*

(Short Tons)

		C- 1- (P-		Consum	ption of Waste	Paper	Stocks of
Year and Month—1936	Shipments of box board	Stocks of Box Board end of month	Production	Rated Capacity	Consumed	Per Cent of Capacity	Waste Paper, End of Mo. at Plants
January	000000000000000000000000000000000000000	****	271,210	370,319	229,064	61.9	216,040
February	***************************************	0000	271,107	343,024	226,216	65.9	193,919
March		**************	285,257	356,763	237,601	66.6	204,376
April		***************************************	295,899	356,829	245,738	68.9	204,355
May			289,527	356,463	241,895	67.9	213,433
June	***************************************		288,682	359,359	241,656	67.2	218,330
July			299,033	371,692	249,402	67.1	219,042
August	***************************************		319,391	359,360	268,770	74.8	207,886
September		***************************************	328,519	357,870	281,046	78.5	191,408
October			359,849	376,498	306,874	81.5	189,590
November	000000000000000000000000000000000000000		321,624	349,317	274,332	78.5	182,822
December			328,973	376,053	279,069	74.2	199,404
Total (Year 1935		-	3,658,871	4,333,547	3,081,662	71.1	-
Total (Year 1935)						63.3	*******
Total (Year 1934)	2 (41 570		3,294,055	4,203,940	2,745,395		******
Total (Year 1933)	2,641,570	******	2,642,734	4,189,923	2,393,973	50.2	
Tetal (V	2,392,374	***************************************		3,245,183	2,033,175	62.7	****
Total (Year 1932)	2,160,093	***********		3,633,531	2,151,194	59.2	********
Total (Year 1931)	2,544,301	***************************************	***************************************	3,598,254	2,391,368	66.5	*********
Total (Year 1930)	2,692,498	************		3,789,427	2,572,445	67.9	

Revised. At the end of 1934 the Bureau of Census, Department of Commerce, ceased reporting shipments of paper-board and stocks of paper-



HIGH GRADE BLEACHED SULPHITE PULP

SOUNDVIEW PULP COMPANY

EVERETT, WASHINGTON

UNITED STATES

Total Domestic Woodpulp Production, by Grades, From 1899 to 1936 In Tons of 2,000 Lbs.

Year	Total	Groundwood	Sulphite	Soda	Sulphate
1936	5,143,000	1,496,000	1,830,000	537,000	1,817,000
1935		1,355,189	1,594,748	489,238	1,415,096
1934	4 476 139	1,296,535	1,446,044	411,686	1,246,269
1933	104 202 244	1,197,553	1,306,575	495,930	1,259,351
1932	2 760 267	1,203,044	1,145,639	290,703	1,028,846
1931		1,449,240	1,416,671	460,682	1,034,291
1930		1,560,221	1,567,063	504,443	949,513
1929		1,637,653	1,668,707	561,210	910,888
1928		1,615,689	1,595,951	488,641	780,552
1927		1,618,638	1,588,132	487,478	607,172
1926		1,774,192	1,599,776	496,920	523,878
1925		1,629,689	1,447,191	472,647	412,690
1924	52 777 766	1,643,283	1,336,551	440,697	302,735
1923	00 BOO CR3	1,580,553	1,448,690	445,162	314.267
1922	12 621 644	1,483,787	1,374,319	419.857	243,681
1921	50 075 601	1,267,382	1,166,926	300,533	140,760
1920	2 004 704	1,583,914	1.585.834	463,305	188,651
1919	70 FIR OF 3	1,518,829	1,419,829	411,693	120,378
1918	2 212 061	1,364,504	1,456,633	350,362	142,362
1917		1,535,953	1.451.757	437,430	84,799
1916	2 425 001	1,508,139	1,466,402	387,021	73,439
1914	10 002 150	1,293,661	1,151,327	347,928	52,641
1911		*	*		
1910	0.022.026				
	2 405 522	1,179,266	1,017,631	298,626	
	0.410.049	*	*	*	*
1908					
1904	1,921,768	968,976	756,976	196,770	
1899	1.179.525	586.374	416,037	177,114	

|Includes 48,460 tons of screenings as follows: mechanical, 10,115; emical, 38,345.

Includes 49.068 tons of screenings, as follows: mechanical, 6.611; emical, 42.457.

*Not reported separately.

fincludes 64.427 tons of screenings, as follows: mechanical, 11,459; emical, 52,968.

³Includes data for screenings, as follows: Mechanical, 4,701 tons; sulphite, 37,093; sulphate, 6,327.

pnite, 37,099; suipnate, 0,327.

Includes data for screenings, as follows: Mechanical, 8,229 tons; sulphite, 3,433; sulphate, 3,919.

Includes data for screenings as follows: Mechanical, 9,944 tons; sulphite, 41,601; sulphate, 3,918.

Includes data for screenings as follows: Mechanical, 9,944 tons; sulphite, 41,601; sulphate, 3,918.

Includes data for screenings as follows: Mechanical, 17,670 tons; sulphite, 44,105; sulphate, 2,922.

Includes data for some screenings.

Includes data for screenings as follows: Mechanical, 12,759 tons; sulphite, 37,463; sulphate, 1,784.

findudes data for screenings as follows: Mechanical, 12,220 tons; chemical, not shown by process, 35,003.

*Includes data for screenings as follows: Mechanical, 11,769 tons; chemical, not shown by process, 35,824.

1935 figures from United States Pulp Producers Association include 82,912 tons of damaged, off-quality and miscellaneous grades.

WOOD PULP PRICES IN U. S.

Year— Domesti Bleacher Sulphit		Foreign Bleached Sulphite	Foreign Strong Sulphite	Swedish Kraft	Domestic Bleached Soda
1928	\$80	\$68-\$78	\$48-\$55	\$50-\$55	
1929	75- 80	68- 77	50- 56	47- 50	
1930	65- 75	57- 68	42- 56	30- 47	*****
1931	45- 65	43- 57	32- 43	28- 31	
1932	. 35- 45	35- 43	27- 32	25- 30	
1933	. 35- 60	35- 57	27- 43	25- 37	\$40-\$50
1934		55-	42-	33- 38	\$50
1935	50- 55	50- 55	37- 42	33- 36	\$50
1936	. 50- 53	50- 65	38- 50	36- 50	50- 54

Monthly price					
movement, 19	36				
January	\$50	\$50	\$38	\$36-\$38	\$50
February	50	50	38	38	50
March	50 52	50- 55	38	38	50- 52
april	52	55	38	38	52
May	52	55	38	38	52
June	52	55- 53	38	38	52
July	52- 53	53- 55	38	38	52
August	53	55	38	38- 40	52
ochiember.	53	55	38	40	52
October	53	55- 58	38- 40	40	52
November	53	58- 60	40- 44	42- 47	52- 54
December	53	60- 65	45- 50	47- 50	54

UNITED STATES

Wood Pulp Imports-Grade Totals-1899-1921 (In Tons of 2,000 Lbs.)

Year		Total G		Total Sulphite	Total Sulphate	
1921	***************************************	697,100	190,744	328,270	178,086	
1920	***************************************	906,297	233,148	473,175	199,974	
1919	***************************************	636,016	202,253	282,707	151,056	
1918	***************************************	578,209	185,478	270,211	122,520	
1917		677,841	279,073	289,210	109,558	
1916	*******************************	683,765	262,517	*********		
1915	***************************************	568,379	174,056	**********	***********	
1914		675,564	217,256			
1913	•	541,455	167,889	***************************************	************	
1912	*******************	539,790	185,443	************	*************	
1911	******************	562,424	262,681		***********	
1910	***************************************	506,776	224,184		***************************************	
1909		370,023	145,362	*************	***********	
1908	***************	250,485	71,217	***************************************	***************************************	
1907	****************	296,778	**********		***************************************	
1906	*******************************	199,702	***********			
1905	MPR 00 x 0000 - 00 - 00 - 00 - 00 - 00 - 0	170,867	**********			
1904	*****	179,324				
1899	***************	57,335	************			

PULPWOOD IMPORTS

(Unit: 1 Cord-128 Cu. Ft.)

	Rough	Peeled	Rossed	Total			
1936	200,701	977,460	31,597	1,209,758			
1935	99,659	937,248	425	1,037,332			
1934	180,019	789,158	4,801	973,978			
1933	119,852	591,812	11,544	723,208			
1932	114,366	531,158	2,664	648,188			
1931	186,613	817,926	17,128	1,021,667			
1930	331,158	1,234,678	16,365	1,582,201			

Source: Department of Commerce, Bureau of Foreign and Domestic Commerce.

CANADA PULP PRODUCTION

(Tons of 2,000 lbs.)

		Mechanical Tons	Sulphite Tons	Sulphate Tons	Total Tons
1920		1,090,114	654,273	188,487	1,922,774
1921		931,560	476,929	131,337	1,539,826
1922	***************************************	1,241,185	678,878	217,862	2,137,925
1923	***-*****	1,449,106	749,668	224,812	2,413,586
1924		1,427,782	768,035	218,207	2,414,024
1925	***********	1,621,917	842,785	242,207	2,706,909
1926	***************************************	1,901,268	995,203	256,074	3,152,545
1927	***********	1,922,124	1,016,060	262,512	3,200,696
1928		2,127,699	1,117,227	256,969	3,501,895
1929	***********	2,420,774	1,236,232	250,104	3,907,110
1930	***************************************	2,283,130	1,076,804	188,253	3,548,187
1931	***************************************	2,016,480	941,586	145,156	3,103,222
1932	*****************	1,696,021	941,579	144,367	2,781,967
1933	********************	1,859,049	937,313	182,988	2,979,350
1934	****************	2,340,441	1,020,493	205,980	3,566,914
1935	***************************************	2,458,000	1,025,000	206,000	3,689,000
1936	*****	2,900,000	1,141,000	265,000	4,306,000

UNITED STATES

News Print Imports-1933-1936

(Tons of 2,000 lbs.)

From-	1933	1934	1935	1936
Finland	56,577	56,813	73,928	122,972
Germany	12,058	5,740	7,156	9,772
Norway	16,591	16,417	22,571	22,110
Sweden	68,062	68,090	93,428	87,488
Canada	1,545,293	1,958,945	2,062,000	2,422,000
Newfoundland	95,000	107,000	124,000	87,000
Other	15	*******	2	10

1,793,581 2,213,005 2,383,085 2,751,352

Mow CROSSETT ...





The dry end of the Crossett paper machin showing Westinghouse SK Motors and Single reduction Speed Reducers on the sections sanchine drives.



The Westinghouse switchboard controlling the paper machine drive, with the turbine generating equipment and auxiliaries in the background.



another NEW MILL

WESTINGHOUSE-EQUIPPED

• From the wood room to the shipping platform of the Crossett Paper Mills' new plant at Crossett, Arkansas, Westinghouse electrical equipment holds production costs to a minimum.

Power requirements are met by two banks of Westinghouse transformers which step down purchased power and by a Westinghouse non-condensing turbine furnishing process steam and power to the paper machine.

Westinghouse motors and control

throughout the plant efficiently drive equipment in the wood room, the chemical department, the digester, beater, machine and finishing rooms.

Whether you are planning a new mill, or modernizing existing facilities, it will pay you to investigate the complete electrical service offered by Westinghoute-plus the engineering assistance available to you in its application. Call your nearest Westinghouse office.

All

Westinghouse Electric, E. Pittsburgh, Pa.



FROM INCOMING LINE TO DRIVEN MACHINE pecify Westinghouse

RY

drive chembeater,

v mill, it will te elec-

r near-J 93207

gh, Pa.

e

UNITED STATES

Wood Pulp Imports by Grades and Countries of Origin—1936

		COUNTRY	OF ORIGIN				Total by
Grade—	Canada	Finland	Germany	Norway	Sweden	Others	Grades
Mechanical Wood Pulp—Total	170,344	29,699-	*********	8,371	22,374		227,778
Unbleached		24,719 4,980		3,010 5,361	8,771 13,603		
Sulphite—Total	370,421	188,455	74,663	96,341	493,062	75,946	1,298,888
Unbleached	281.062	157,324 31,131	39,871 34,792	25,391 70,950	425,753 67,309	49,022 26,924	786,720 512,168
Sulphite—Total	117,460	92,765		23,544	499,373	4,955	738,097
Unbleached	62,216	87,325 5,440		23,314 230	457,912 41,461	4,955	635,722 102,375
All Others	. 12,737		********	*******	**********		*********
Total (By Countries)	670,962	310,919	74,663	125,246	1,014,809	81,230	2,277,829
Value	\$27,099,612	\$10,461,361	\$2,881,857	\$5,240,935	\$34,199,656	\$2,997,579	\$82,881,000

Source-Import Statistics, U.S. Department of Commerce.

UNITED STATES

Wood Pulp Imports by Grades and Countries of Origin—1935

		31101					
			OF ORIGIN				Total by
Grade-	Canada	Finland	Germany	Norway	Sweden	Others	Grades
Mechanical Wood Pulp—Total	136,112	24,490	*****	7,006	22,404	29	190,041
Unbleached Bleached	136,048	22,143 2,347		3,317 3,689	10,666 11,738	29	172,203 17,388
Sulphite—Total	293,177	175,716	80,255	68,946	446,577	57,798	1,122,449
Unbleached Bleached	67,404 225,773	146,166 29,550	50,024 30,231	16,539 52,407	377,320 69,237	35,573 22,225	693,026 429,423
Sulphate—Total	94,748	66,286	*****	17,356	429,916	3,036	611,342
Unbleached	43,549 51,199	62,173 4,113	decision .	17,328 28	400,654 29,262	2,980 56	525,684 84,658
All Others	9,587	******	******	a spiritrini	25	187	9,799
Total (By Countries)	533,624	266,492	80,255	93,308	898,902	61,050	1,933,631
Value	\$22,508,650	\$8,890,747	\$3,096,673	\$3,837,380	\$30,201,562	\$2,145,975	\$70,680,987

Source-Import Statistics, U S Department of Commerce.

UNITED STATES

Wood Pulp Imports by Grades and Countries of Origin—1934 Long Tons of 2,240 Lbs.)

		COUNTRY OF ORIGIN					- II
Grade-	Canada	Finland	Germany	Norway	Sweden	Others	Total by Grades
Mechanical Wood Pulp	139,815	8,126		4,703	15,812	628	169,084
Sulphite-Total	260,287	132,616	81,980	69,407	374,237	40,174	958,601
Unbleached Bleached	80,867 179,320	112,562 20,054	47,319 34,661	22,529 46,878	314,984 59,253	24,856 15,318	603,117 355,484
Sulphate-Total	77,019	52,367	*****	14,263	332,019	2,460	478,128
Unbleached Bleached	46,215	49,627 2,740	ero como di escolo com	13,811 452	317,740 14,279	2,460	429,853 48,275
All Others	6,737	Quantum projection de	11	044070	0.0000.000	54	6,802
Tetal (By Countries)		193,109	81,991	88,373	722,068	43,316	1,612,615
Value	\$20,302,452	\$6,734,505	\$3,264,548	\$4,369,160	\$25,624,868	\$1,482,736	\$61,778,269

Source-Import Statistics, U. S. Department of Commerce.

10 YEARS AGO IN PACIFIC PULP & PAPER INDUSTRY

MAY-JUNE, 1927

WATCHWORD: "Perpetuity"..."West's Best" Passes Tests... Coast Mill Makes a Better Mousetrap...Chips from the News 10 Years Ago

BEST IN WEST:

The Industry in general took its hat off in May of 1927 to Rainier's impressively up-to-date new mill at Shelton. \$2,500,000 worth of the latest in design, construction and equipment went into the mill under the experienced supervision of V. D. Simons, outstanding pulp and paper mill engineer of Chicago. Even in raw material supply Rainier's new mill struck a significant note: part of its chips came

from the neighboring McCleary fir mill and Reed hemlock mill..."—another step," as Pulp said, "toward more complete utilization of Western forest products."



tional Department with headquaters in San Francisco, "to render material assistance in up-building the printing industry and advocate the use of better paper by busines houses"... Significantly, F. O. Leitzell of the Blaw-Knox Company was quoted in the June Pulp: "I am convinced, after my visit to British Columbia, Washington and Oregon, that it is only a question of time until the Pacific Coast becomes the center of the pulp and paper industry of the country."

MOUSETRAP STORY, '27 VERSION:

Longview was a new city in 1927, and Pacific Straw Paper and Board Company was an infant enterprise just rounding out its first year. "Make good board and we'll

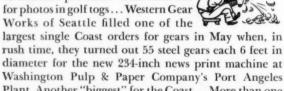
buy it," the trade had said ... Pulp for May, 1927, reported that by the end of the first year Pacific was operating 24 hours a day at full capacity and planning expansion of the plant ... a bet-

ter story than the one about the world beating a path through the forest to the better mousetrap maker's door.

CHIPS ON THE FLY:

The pages of *Pulp* for May and June '27 recorded varied signs of growth and progress in the Industry. Pacific States Paper Trade Association held its tenth annual

convention at Del Monte, California.
A spirit of cooperation and attention to business prevailed—with time out for photos in golf togs... Western Gear Works of Seattle filled one of the



Plant. Another "biggest" for the Coast... More than one Texrope Drive was installed in the new Rainier mill at Shelton—significant of the successful development of a new type drive designed for the Pulp & Paper Industry. For over two years Allis-Chalmers engineers had been working on transmission problems of the mills; midyear issue of *Pulp* described this development, today a vital feature in power transmission in pulp mills... Same month, Rollie Ayres established Zellerbach's Educa-

"-FOR PERPETUITY":

According to Webster, C. R. Berry meant "Let's Build for Unlimited Time" when he headed his article with this tongue-twister. In *Pulp* for June, 1927, he said:

"There are many factors to consider in making for permanency...in the industry...laws to be changed, abrogated, amended...new laws to be passed to protect the industry and also

to protect industries affected by the pulp and paper industry." The need for private reforestation programs, data on how to handle the problem of waste disposal, the technical association in the East as the means for all-important concerted action—Berry mentioned them all; spoke in well-deserved superlatives of the Forest Service's leadership in planning for the future of the Industry on the Coast... Only two years later, Pacific Coast Section of TAPPI was formed, evidencing the Industry's keen realization of the importance of the problems outlined by perpetuitist Berry.

SIGNAL CONTRIBUTIONS:

As the Industry grew its needs grew. Better supplies, improved processes were always being sought by research men. Great Western Electro-Chemical Company, in 1916 the pioneer electrolytic chlorine plant of the Coast, made signal contributions to the Industry: chloramines, the hypochlorous acid process, zinc hydrosulphite. Still research goes on

...In this decade, Great Western undoubtedly will pioneer new products and processes for the benefit of the Industry, new companions for the Bear Brand Chlorine which has served the Industry since its early years.

GREAT WESTERN ELECTRO-CHEMICAL CO.



9 MAIN STREET, SAN FRANCISCO PLANT: PITTSBURG, CALIFORNIA NEW YORK SEATTLE LOS ANGELES

UNITED STATES
Wood Pulp Imports—By Grades and Countries of Origin—1933
(Long Tons of 2,240 lbs.)

		COUNTR	Y OF ORIG	IN			
Grade—	Canada	Finland	Germany	Norway	Sweden	Others	Totals by Grades
Mechanical Wood Pulp	147,742	20,148	150	5,622	13,988	100	187,750
Sulphite—Total	271,291	138,439	76,459	82,900	411,948	62,599	1,043,636
Unbleached Bleached	76,537	116,019 22,420	43,895 32,564	26,597 56,303	346,684 65,264	33,271 29,328	643,003 400,633
Sulphate—Total	29,634	49,288	848	16,513	375,583	1,764	473,630
UnbleachedBleached	29,634	47,039 2,249	848	16,271 242	366,424 9,159	1,764	461,980 11,650
All Other Pulps	28,457	******	5	*****		266	28,728
Total (By Countries)	477,124	207,875	77,462	105,035	801,519	64,729	1,733,744
Value\$1	3,001,772	\$6,453,588	\$2,638,922	\$3,867,528	\$24,096,698	\$2,340,502	\$57,399,010

Source-Import Statistics, U. S. Department of Commerce.

UNITED STATES

Wood Pulp Imports — By Grades and Countries of Origin — 1932
(Long Tons of 2,240 lbs.)

		COUNT	RY OF ORIGI	N			
Grade—	Canada	Finland	Germany	Norway	Sweden	Others	Totals by Grades
Mechanical Wood Pulp	133,960	16,600		7,664	9,865	183	168,272
Sulphite—Total	206,924	107,287	80,515	78,373	317,629	44,007	834,735
UnbleachedBleached	56,335 150,589	95,579 11,708	42,330 38,185	31,402 46,971	270,894 46,735	19,667 24,340	516,207 318,528
Sulphate—Total	37,283	45,278	482	13,285	227,226	1,316	324,870
UnbleachedBleached	17,411 19,872	43,756 1,522	482	12,961 324	225,578 1,648	1,316	301,504 23,366
All Other Pulp	1,569	*********	**********	*******	**********	*******	1,569
Total (By Countries)	379,736	169,165	80,997	99,322	554,720	45,506	1,329,446

Source-Import Statistics, U. S. Department of Commerce.

CANADA
Wood Pulp Exports
(Tons of 2,000 lbs.)

		(1 ons of 2,0	UU Ibs.)				
		ical Pulp		nical Pulp	Total, All Pulp		
Year-	Tons	Value	Tons	Value	Net Tons	Value	
1936	620,977	\$28,405,644	133,512	\$2,841,051	754,489	\$31,246,695	
1935	538,419	24,993,785	124,049	2,631,945	662,468	27,625,730	
1934	486,990	22,716,942	118,645	2,727,902	605,635	25,444,844	
1933	476,358	20,666,614	132,151	2,688,023	608,509	23,354,637	
1932	336,063	16,367,976	116,229	2,562,080	452,292	18,930,065	
1931		25,450,476	165,096	4,606,167	622,531	30,056,643	
1930	551,413	33,092,807	208,759	5,967,172	760,172	39,059,979	
1929	626,378	37,670,383	209,331	5,906,638	835,709	43,577,021	
1928	660,136	40,068,703	203,670	5,546,120	863,806	45,614,323	
1927	618,324	39,234,577	260,831	7,761,464	879,155	46,996,011	
1926	621,004	40,571,304	382,077	11,505,818	1,003,081	52,077,122	
1925	599,466	37,358,632	360,265	10,573,273	959,671	47,931,905	
1924	528,279	32,326,943	253699	7,916,029	781,978	40,242,972	
1923				**********	875,358	37,027,496	
1922	***********		******	*************	818,246	41,037,849	
1921		**********	****	**********	527,222	33,133,675	
1920				*******	819,985	76,563,978	
1919		****	****	*********	709,134	37,184,764	
1918					583,911	33,359,922	

Ago dquarrender silding vocate

RY

Leitn pany
llp: "I
isit to
on and
tion of

p and y."

Build e with

said: nsider in the abroto be d also per ingrams, posal,

m all; rvice's try on ection keen tlined

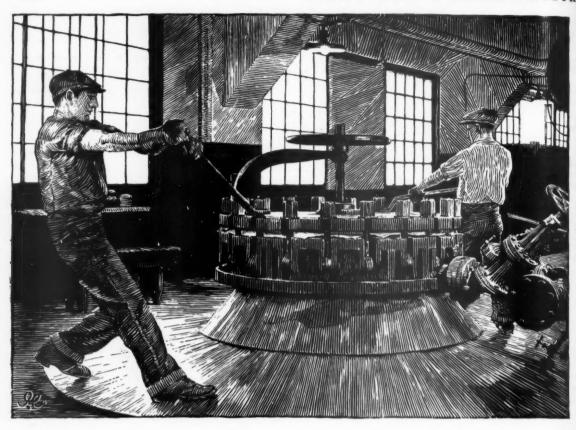
or all-

es, imearch 1916

l pioof the orine

CO.

NIA ELES



• UNIFORMITY of cooking procedure

WITH uniform chips inside the digester, the start of every cook in Weyerhaeuser sulphite mills marks the beginning of careful control over the cooking process. Every precaution is taken to insure uniformity in pulps designed to meet the exacting conditions of paper production.

PULP DIVISION • WEYERHAEUSER TIMBER COMPANY



LONGVIEW, WASHINGTON
Mills at
Longview and Everett,
Washington

News Print

NORTH AMERICAN PRODUCTION

Source-News Print Service Bureau

			Canada	United States	Newfoundland	Mexico	Total
1936—T	welve	Months	3,192,000	921,000	328,000	**********	4,441,000
1935-	66	**	2,753,000	921,000	328,000		4,441,000
1934-	**	**	2,599,000	957,000	316,000	20,000	3,892,000
1933—	66	**	2,017,004	946,374	270,834	16,367	3,250,579
1932-	66	**	1,914,316	1,008,588	271,804	12,683	3,207,391
1931-	**	66	2,221,454	1,157,436	294,983	15,195	3,689,068
1930—	**	**	2,504,147	1,282,372	287,259	14,286	4,088,064
1929-	**	66	2,728,827	1,392,276	255,501	18,680	4,395,284
1928-	**	66	2,381,102	1,417,572	230,745	16,981	4,046,400
1927—	66	66	2,086,949	1,485,495	202,852	14,137	3,789,433
1926-	**	66	1,881,737	1,684,218	186,471	13,412	3,765,838
1925-	**	66	1,522,217	1,530,318	96,588	12,681	3,161,804
1924-	66	**	1,352,994	1,481,425	64,648	11,500	2,910,567
1923—	66	**	1,266,232	1,485,000	63,906	12,000	2,827,138

VALUE AND QUANTITY OF WOOD-PULP PRODUCTION, BY STATES-1933

Source: Department of Commerce
This table represents statistics for all states for which separate figures can be published without disclosing exactly or approximately, the data reported by individual establishments. Certain of the "other states," however, are more important in the industry than some of the states shown separately.

1	Wood Pulp Produced Tons (2,000 lbs.) Value				
United States	4,293,344	\$124,556,465			
States— Wisconsin	532,610	18,959,678			
Washington		18,803,093			
Maine		18,580,679			
New York		12,347,527			
Louisiana		7,833,513			
Virginia		7,404,277			
Pennsylvania		6,181,800			
Michigan	153,674	5,281,025			
Oregon		5,040,341			
New Hampshire	78,802	4,546,495			
Minnesota	154,522	4,467,056			
Massachusetts	12,387	513,361			
Massachusetts Vermont	18,000	353,822			
Other States ¹	649,418	14,243,798			

¹Alabama, Arkansas, Delaware, Florida, Maryland, Mississippi, New Jersey, North Caroline, Ohio, South Carolina, Tennessee and West Virginia.

BRITISH COLUMBIA **Principal Production Statistics** 1934

A. Carrier	Quantity	Value
Pulpwood produced cords	447,655	\$2,764,498
Pulpwood consumed cords	428,287	2,683,707
Wood pulp produced tons	383,818	6,712,981
Wood pulp consumed tons	314,190	4,123,199
Paper produced tons	299,502	10,325,544

BRITISH COLUMBIA

NY

Principal Production Statistics

1935

	Quantity	Value
Pulpwood producedcords	438,197	\$2,775,114
Fulpwood consumed corde	421,393	2,707,412
Wood pulp produced tons	377,522	6,261,862
WOOD DUID COnsumed tone	312,560	4,138,145
Paper produced tons	299,816	10,708,145

NEWS PRINT IN CANADA, 1913-1936

Source-Newsprint Service Bureau

(Tons)

Year	Production	Exports	Balance at Home
1913	350,000	*	*
1914		*	*
1915	489,000	*	*
1916		*	*
1917	686,000	*	*
1918	735,000		*
1919	803,000	708,000	95,000
1920	876,000	762,000	114,000
1921	808,000	709,000	99,000
1922	1,082,000	960,000	122,000
1923	1,266,000	1,138,000	128,000
1924	1,353,000	1,219,000	134,000
1925		1,402,000	120,000
1926	1,882,000	1,732,000	150,000
1927	2,087,000	1,882,000	205,000
1928	2,381,000	2,207,000	174,000
1929	2,729,000	2,511,000	218,000
1930	2,504,000	2,331,000	173,000
1931	2,221,000	2,008,000	213,000
1932	1,914,000	1,777,000	137,000
1933	2,017,000	1,838,106	179,000
1934	2,599,000	2,400,000	199,000
1935		2,575,000	178,000
1936	3,192,000	2,993,091	198,909

*No data.

EXPORTS OF NEWS PRINT FROM UNITED STATES

(Tons)

Source-Newsprint Service Bureau

Country-	1933	1934	1935	1936
Europe	504	404	159	61
Canada	10	6	9	177
Central America	804	1,345	800	407
Mexico	*****	46	3,607	6,748
Cuba	2,090	2,735	3,781	3,192
South America	1,220	1,400	1,755	1,207
China and Japan	4,540	14,273	10,610	1,044
Philippine Islands	1,770	2,905	1,459	1,492
Other Countries	235	306	302	268
Total	11,173	23,420	22,582	14,596



TRY

WORLD PRODUCTION OF NEWS PRINT PAPER—1927 TO 1936*

(Short tons of 2,000 lbs.)

				,							
Countries	1927 Tons	1928 Tons	1929 Tons	1930 Tons	1931 Tons	1932 Tons	1933 Tons	1934 Tons	1935 Tons	1936 Tons	10-Year Average
No.	2,087,000	2,381,000	2,729,000	2,504,000	2,221,000	1,914,000	2,017,000	2,599,000	2,753,000	3,192,000	2,440,000
anada Contes	1,486,000	1,418,000	1,392,000	1,282,000	1,157,000	1,009,000	946,000	957,000	912,000	921,000	1,148,000
Inted Scittain	615,000	646,000	637,000	608,000	719,000	790,000	830,000	940,000	970,000	1,004,000	776,000
HERE PARTIES	565,000	600,000	623,000	590,000	540,000	450,000	412,000	446,000	464,000	525,000	522,000
ermany	203,000	231,000	256,000	287,000	295,000	272,000	271,000	316,000	336,000	328,000	280,000
lewfoundland	239,000	234,000	275,000	240,000	265,000	257,000	266,000	272,000	298,000	282,000	263,000
weden	246,000	267,000	286,000	285,000	258,000	272,000	304,000	344,000	368,000	384,000	301,000
ipan	121,000	136,000	210,000	240,000	243,000	275,000	335,000	353,000	358,000	331,000	260,000
rance	200,000	214,000	217,000	223,000	241,000	254,000	285,000	316,000	329,000	402,000	268,000
niand	102 000	198,000	189,000	202,000	104,000	200,000	167,000	155,000	182,000	200,000	179,000
orway	10,000 (?) 48,000(?) 90,000(3	100,000(3	1 125,000	135,000(?) 190,000	193,000	217,000	112,000(?)
ISSES	77 000	76,000	77,000	84,000	79,000	85,000	87,000	92,000	92,000	91,000	84,000
letherlands	42,000	45,000	52,000	69,000	69,000	74,000	72,000	68,000	76,000	69,000	64,000
aly	50,000	57,000	62,000	64,000	62,000	53,000	50,000	50,000	50,000	57,000	56,000
ISTIA	25 000	26,000	30,000	32,000	62,000	65,000	65,000	42,000	42,000	18,000	
min	10 000/		48,000	47,000	49,000	45,000	45,000	39,000	45,000	44,000	44,000
witzerland	50.000	50,000	57,000	50,000	44,000	40,000	40,000	51,000	48,000	53,000	48,000
elgium		45,000	47,000	44,000	42,000	40,000	38,000	37,000	41,000	46,000	43,000
zechoslovakia	17,000	20,000	23,000	27,000	27,000	23,000	23,000	32,000	34,000	32,000	26,000
pland	21 000	20,000	27,000	29,000	17,000	6,000	6,000	6,000	4,000	7,000	14,000
tonia	14,000	17,000	19,000	14,000	15,000	13,000	16,000	20,000	20,000		15,000
lerico	16 000	16,000	11,000	10,000	10,000	9,000	7,000	6,000	1,000	*********	9,000
enmark	3.000	3,000	4,000	4,000	3.000	5,000	5,000	5,000	6,000	7,000	5,000
IVIA	3,000	3,000	4,000				.,	6,000	6,000	7,000	
hile								0,000	0,000	7,000	2,000
Total	6,364,000	6,747,000	7,319,000	7,025,000	6,622,000	6,276,000	6,421,000	7,342,000	7,628,000	8,217,000	7,000,000

(?) Figures incomplete.

**Compiled by the News Print Service Bureau.

SOURCES OF NEWS PRINT USED IN THE UNITED STATES

(Tons in Round Numbers)
Source: News Print Service Bureau

			Im	ports into the U.S. Fro	om ———	Available for
	U. S. Production	U. S. Exports	Canada	Newfoundland	Europe	Consumption
1913	1,305,000	43,000	219,000		1,000	1,482,000
1914	1,313,000	61,000	310,000		5,000	1,567,000
1915	1,239,000	55,000	367,000	****	1,000	1,552,000
1916	1,315,000	76,000	468,000		0000000000	1,707,000
1917	1,359,000	94,000	558,000	*****	1,000	1,824,000
1918	1,260,000	97,000	596,000			1,759,000
1919	1,375,000	111,000	628,000		3,000	1,895,000
1920	1,512,000	49,000	679,000	1,000	50,000	2,193,000
1921	1,225,000	17,000	657,000	*********	135,000	2,000,000
1922	1,448,000	26,000	896,000	******	133,000	2,451,000
1923	1,485,000	16,000	1,109,000		200,000	2,778,000
1924	1,481,000	17,000	1,197,000	4,000	156,000	2,821,000
1925	1,530,000	23,000	1,295,000	20,000	133,000	2,955,000
1926	1,684,000	19,000	1,658,000	94,000	100,000	3,517,000
1927	1,486,000	12,000	1,776,000	89,000	122,000	3,461,000
1928	1,418,000	11,000	1,926,000	114,000	116,000	3,563,000
1929	1,392,000	19,000	2,195,000	132,000	96,000	3,796,000
1930	1,282,000	10,000	1,989,000	156,000	134,000	3,551,000
1931	1,157,000	10,000	1,754,000	160,000	151,000	3,212,000
1932	1,009,000	8,000	1,533,000	114,000	144,000	2,793,000
	946,000	11,000	1,545,000	95,000	153,000	2,728,000
1934	961,000	23,000	1,956,000	107,000	147,000	3,148,000
1935	912,000	23,000	2,062,000	124,000	197,000	3,272,000
1936	921,000	15,000	2,422,000	87,000	243,000	3,658,000

IMPORTS OF EUROPEAN NEWS PRINT INTO THE U. S.* January 1, 1920—December 31, 1935 (Tons of 2,000 lbs.)

		Sweden	Germany	Finland	Norway	Other	Total
1920	****************	18,875	21,066	3,244	5,916	1.337	50,438
1921	**************	48,932	38,938	22,661	20,193	4,613	135,337
1922	************	51,812	32,838	26,205	17,292	4,741	132,888
923	**************	64,570	52,290	41,782	33,829	7,798	200,269
1924	*************	60,827	38,840	35,639	17,259	3,238	155,803
925	*****************	65,518	25,862	21,683	17.030	2,421	132,514
926	**************	46,020	12,884	34,292	6,176	554	99,926
927	**************	66,920	7,096	29,330	16,796	1,919	122,061
928	***************	55,718	9,170	40,237	10,864	418	116,407
1930	***************	50,717	9.741	32,293	3,498	124	96,373
1931	-	69,268	13,788	41,913	9,326		134,295
1932	**************	66,688	21,910	47,992	14,444	35	151,069
1933	***************	61,079	14,323	46,633	22,692	194	144,921
1934	*****************	68,062	12,058	56,577	16,591	15	153,303
1935	*************	68,090	5,740	56,813	16,417		147,060
1936	-	93,428	7,156	73,928	22,571	2	197,085
			9,772	122,972	22,110	10	242,352
Total	17 years1.0	044,012	333,472	734,194	273,004	27,419	2,412,101
Percei	nt	43.3	13.8	30.5	11.3	1.1	100.0

*Source-Newsprint Service Bureau.

NEWS PRINT EXPORTS FROM CANADA*

TO:	Tons	1934 Tons	Tons	1936 Tons
United Kingdom	107,041	79,087	115,290	94,442
South America	50,061	114,972	112,967	107,695
South Africa :	6,874	10,443	14,064	20,124
Australia	57,561	9,567	108,365	178,982
New Zealand	16,758	25,857	32,463	42,460
U. S. A1	,519,680	1,958,945	2,051,937	2,398,674
Japan	32,180	57,615	66,554	75,472
China		34,427	41,171	19,588
All other	47,951	18,711	32,176	55,664
Total1	,838,106	2,399,624	2,574,987	2,993,091

*Compiled from Canadian Pulp & Paper Association, government reports, and News Print Service Bureau data.

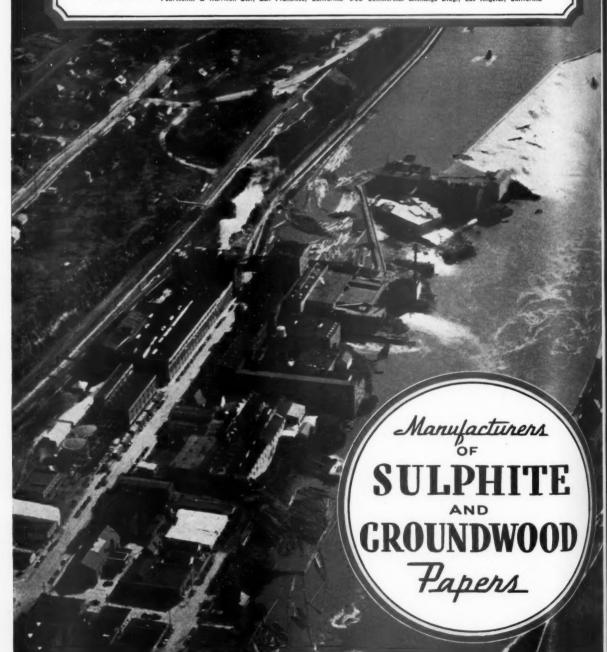
St.
Buff New Verrichic Duli Dakk Galat Wass Ohio Mar Phill Los Virg Flor Mas Wis New San Rocc Mol Sou San Geo Geo

Nev 45,0

HAWLEY PULP & PAPER COMPANY

OREGON CITY, OREGON

Sales Offices: 509 Medical Arts Bldg., Seattle, Washington 1233 American Bank Bldg., Portland, Oregon Fourteenth & Harrison Sts., San Francisco, California 503 Commercial Exchange Bldg., Los Angeles, California



IMPORTS OF NEWS PRINT PAPER INTO THE UNITED STATES, 1936

Imports of news print paper into continental United States in 1936 were 369,000 tons, or 15 per cent greater than in the preceding year. The table below, worked up from monthly reports of the Department of Commerce, lists—in 2,000-lb. tons—the imports by customs districts and countries of origin, each ranked in the order of importance. There are not included in the table, importations from Canada of 40 tons into Alaska, 2,086 tons into Puerto Rico and 2,424 tons into Hawaii.

COUNTRIES OF ORIGIN

Customs Districts.	Canada	Finland	Sweden	Newfoundland	Norway	Germany	Total
Michigan	588,015	manura and make and manural and a separate and		******	000074790898		588,015
St. Lawrence			**********		************		416,358
Ruffalo	201 211		**********	********		*************	301,344
New York	201,023	31,115	8,763	18,476	4,786	9,715	273,878
Vermont	186,429		**********	0			186,429
Chicago	171 070		**********			*********	171,270
Duluth and Superior		****	*********	************	**********		168,592
Dakota			***************************************	****		***********	117,058
Galveston	56,540	104	39	3,758	1,775	**********	62,216
Washington		1,320	1,305				53,940
Ohio	20 010	************		drawn w w or or 9 10 10 10		ge space op derderlindssom meng	38,910
Maryland	20 825	14,167	914		30	***********	45,836
Philadelphia		16,407	8,335	983	1,653		45,453
Los Angeles		10,928	13,640		7,557	***************************************	46,814
Virginia		4,390	656	10,830		35	30,235
Florida	10 100	7.343	25	22,174	968	22	43,030
Massachusetts		7.883	137	7,281	110		22,280
Wisconsin	6 222	. ,		.,		***************************************	6,200
New Orleans		6,395	6,945	19.071	2,797		40,863
San Francisco		13,571	29,778		2,005	***************************************	50,041
Rochester	2.006		,	*********			2,886
Mobile	0.500	3,855	***************************************	4,337	251	***************************************	11,032
South Carolina		717		1,500			2,226
San Diego		29	6,620				6,800
Oregon			-,	***********			54
Sabine		2,998	500	*************			3,948
Georgia		1,750	9,831	*********	158		11,739
Total	2,417,765	122,972	87,488	86,910	22,090	9,772	2,746,997

Canada supplied 88 per cent of the news print imported into the United States last year, European countries 9 per cent and Newfoundland 3 per cent. Imports from Canada in 1936 were 361,000 tons greater than in 1935, imports from Europe were 45,000 tons more than in the preceding year, while imports from Newfoundland were approximately 37,000 tons less.

Some 89 per cent of the Canadian news print imported into the United States came through the eight customs districts of Michigan, St. Lawrence, Buffalo, Chicago, New York, Vermont, Duluth and Superior and Dakota. News print from Newfoundland went to Atlantic and Gulf coast ports. The overseas news print was widely distributed, with approximately 87,000 tons going to the Pacific Coast, chiefly San Francisco and Los Angeles. The only substantial movement of German news print to the United States was to the port of New York.

PULPWOOD CONSUMPTION—QUANTITY, BY STATES-1931-1932-1933

Source: Department of Commerce

This table presents statistics for all States for which separate figures can be published without disclosing, exactly or approximately, the data reported by individual establishments. Certain of the "Other States", however, are more important in the industry than some of the States shown separately.

	Tota 1931 (cords)	al quantity consu 1932 (cords)	1933
United States		5,633,123	6,561,674
State-			
Louisiana	431,425	449,151	584,217
Maine	1,112,368	948,749	980,315
Massachusetts	33,438	20,420	19,599
Michigan	251,197	216,285	252,295
Minnesota	197,587	211,245	235,011
New Hampshire	150,568	included in 1	155,140
New York	538,370	437,640	478,727
Oregon	319,876	265,470	241,841
rennsylvania	292,615	237,486	224,076
vermont	24,633	included in 1	16,011
Virginia	368,030	337,585	387,513
Washington	1.025.878	688,326	1,094,857
Wisconsin	956,659	796,591	864,779
Other States	975,122	1,024,175	1,027,238

Alabama, Arkansas, Delaware, Florida, Maryland, Mississippi, New soy, North Carolina, Ohio South Carolina, Tennessee, West Virginia, the Hampshire and Vermont for 1932.)

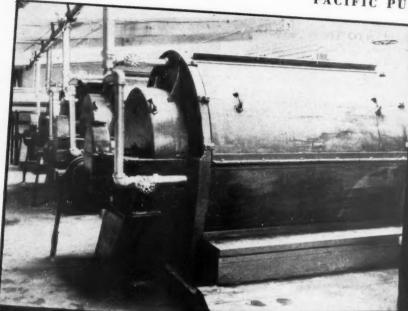
WOOD-PULP PRODUCTION, BY STATES 1931-1932-1933

(Revised)

Source: Department of Commerce.

	Wood pulp p 1931	produced (tons of 1932	f 2,000 lbs). 1933
United States	4,409,344	3,760,627	4,293,344
State— Louisiana	260,765	289,021	382,983
Maine	889,416	764,834	778,670
Massachusetts	23,785	14,210	12,387
Minnesota	148,369	134,509	154,522
New Hampshire			78,802
New York	466,510	353,867	393,615
Oregon	237,532	187,133	189,332
Pennsylvania	160,023	130,149	123,758
Vermont	25,601	included in 1	18,000
Virginia	223,417	207,660	241,803
Washington	580,016	420,529	583,770
Wisconsin		476,228	532,610
Other States	657,528	628,804	649,418

¹Combined to avoid disclosing, exactly or approximately, the output of individual establishments.

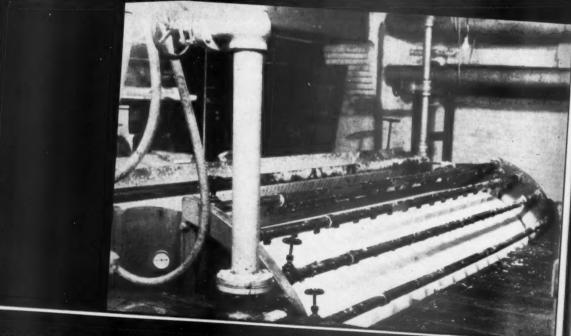




KNOTTERS

and
VACUUM
WASHERS

These four Knotters remove the rejects from sulphite direct from the blow pits, and the accepted stock is washed over an all bronze "IMPCO" Vacuum Washer, below, as part of a combined blending and consistency control system in prominent Maine Sulphite Mill



IMPROVED
PAPER MACHINERY
CORPORATION

Nashua, New Hampshire

Census Reports Pulp Industry's Progress

Hemlock Scores Largest Increase

Significant trends in the pulp industry States pulp industry for 1935, which was taken as a part of the Biennial Census of Manufacturing.

Interpretation of the incomplete staphasize trends in the industry which will emphasize trends in the industry which will make themselves more apparent within the next few years.

Without interpretation the figures show that the industry made an impresive gain in 1935 over the low point of 1933 but did not approach the results of the year 1929.

More Plants Operating

The census reports shows that seven more companies operated five more mills in 1935 than were running in 1933. The number of operating concerns in 1935 totalled ten less and the number of mills venty less than in 1929.

More Persons Employed

Wage earners, not including officers and salaried employees, rose 3,549 in 1935 over the number employed in 1933, 1,106 fewer than the number employed in 1929.

Pulp Production Up

Wood pulp production in 1935, both chemical and mechanical, totalled 4,944, 226 tons as compared with 4,276,204 tons in 1933, according to the census This is an increase of 668,022 tons or 10.9 per cent.

Of special significance is the growth in bleached sulphate pulp production which rose from 63,413 tons in 1933 to 127,461 tons in 1935, an increase of 101

Three new grade listings are recorded in the 1935 census report which were not segregated in the past. Under the heading of sulphite pulps, super purified pulp production is listed as 81,623 tons valued at \$5,838,409.

Rayon and special chemical grades in 1935 totalled 126,470 tons valued at \$7,-170,113. Other bleached (not ordinary bleached sulphite) amounted to 775,571 tons valued at \$37,179,288.

All types of pulp showed increased production in 1935 over 1933.

Sulphite pulps, including both bleached and unbleached registered an increase in 1935 over 1933 of 267,173 tons, while sulphate pulps, including both bleached and unbleached, gained 208,298 tons in 1935 over the 1933 production.

The preliminary census report does not segregate pulp production by states. This division will appear in a later re-

Hemlock Scores Greatest Gain

Although the consumption of spruce pulpwood was larger in 1935 as in the past than the consumption of hemlock, the latter showed the greatest increase of all the pulpwoods with a gain in con-sumption of 408,715 cords over 1933. This indirectly shows the steady growth of pulp production on the Pacific Coast.

Spruce scored the second largest gain in 1935 over the 1933 consumption with an increase of 309,513 cords, while Southern yellow pine increased 224,814 cords 1935 over that consumed in 1933. All other woods increased in consumption in 1935 with the exception of tama-rack (larch) which registered a considerable decrease.

Decline in Use of Mill Waste

The consumption of slabs and mill waste by pulp mills in 1935 declined 187,349 cords from 480,141 cords in 1933 to 292,792 in 1935 or 39 per cent. On the Pacific Coast the decline in the use of slabs and other mill waste was caused by two primary factors, an increasing demand for quality pulp, more difficult to obtain from waste raw material than from logs and cordwood; and, by the low price of hemlock logs. Despite the rise in lumber production since the Spring of 1933 hemlock log prices have not risen appreciably due to the larger footage brought into the market by loggers logging for Douglas fir for lumber. Logging operations in Oregon, Washington and British Columbia Coastal forests are working in stands averag-ing far more hemlock than did the timber stands cut a few years ago. Today it is not unusual for a stand being logged to run as high as 50 per cent hemlock as compared with a normal in the past of from 5 to 10 per cent. As the lum-ber market will not take such an increase in hemlock lumber the hemlock logs become available to the pulp mills at prices which make the use of slabs and mill waste uneconomical. And the pulp mills on the Pacific Coast are not possessed of sufficient capacity to utilize all the hemlock logs offered as a by-product of the logging operations of fir for lumber.

Following is the full preliminary re-port on the 1935 census of the United States pulp industry as released by the Bureau of Census:

"Both employment and production in the manufacture of pulp in 1935 showed substantial increases as compared with

Percent of

TABLE 1.—SUMMARY FOR THE INDUSTRY: 1935, 1933 AND 1929

				decrea	
	1935	1933	1929	1933- 1935	1929- 1935
Number of establishments ¹	188	181	198	3.9	-5.1
wage earners (average for the year)2	23,623	20,074	24,729	17.7	-4.5
i wates	S 23,401,212	\$ 18,103,342	\$ 32,679,407	29.3	-28.4
Cost of materials, fuel, and purchased electric energy	96,246,588	81,896,058	148,752,729	17.5	-35.3
Value of products ³	167,208,261	134,691,766	238,928,279	24.1	-30.0
Value added by manufacture'	70,961,673	52,795,708	90,175,550	34.4	-21.3

The 188 establishments which reported for 1935 operated 190 mills, including six which manufactured pulp from materials other than wood. The stablishments which reported for 1933 operated 185 mills, including eight which manufactured pulp from materials other than wood. The stablishments covered by the 1929 census operated 208 mills, including three which used materials other than wood.

Not including salaried officers and employees. Data for such officers and employees will be included in a later report. The item for wage earners are reage of the numbers reported for the several months of the year. In calculating it, equal weight must be given to full-time and part-time wage areas (not reported separately by the manufacturers), and for this reason it exceeds the number that would have been required to perform the wind one in the industry if all wage earners had been continuously employ throughout the year. The quotient obtained by dividing the amount of the average number of wage earners can not, therefore, be accepted as representing the average wage received by full-time wage earners. In comparisons between the figures for 1935 and those for earlier years, the possibility that the proportion of part-time employment varied from the proportion of part-time employment varied from the proportion of part-time and the proportion of part-time employment varied from the proportion of part-time and part proportion of part-time employment varied from the proportion of part-time and part proportion of part-time employment varied from the proportion of part-time and part proportion of part-time employment varied from the proportion of part-time and part proportion of part-time employment proportion of part-time and part proportion of part-time employment proportion of part-time employment proportion of part-time and part proportion of part-time employment proportion of part-time and part-time and part proportion of part-time and part proportion of part-time and part-time and part-time wage and part part proportion of pa

Profits or losses can not be calculated from the census figures because no data are collected for certain expense items, such as interest, rent, margin, taxes, insurance, and advertising. Value of products less cost of materials, fuel, and purchased electric energy.



OVER AND OVER AGAI

As pioneer Pacific Coast makers of book papers, writing papers, specialties, tablets, composition books, commercial stationery and school supplies ---We have always placed primary stress on the dependability, the uniformity of our products....

• Apparently western printers, publishers, purchasing agents and advertising men like this policy-for over and over again they tell us so!





EVERETT NAUTILUS E. F. BOOK EVERETT NAUTILUS SUPER BOOK **EVERETT NAUTILUS EGGSHELL** EVERETT SYMPHONY BOOK (E. F. and Super) EVERETT ART BOOK (English Finish) EVERETT MONASTERY TEXT (Eggshell) EVERETT SUPER ROTOGRAVURE EVERETT TWINPHASE BOOK (Offset) EVERETT M. F. LABEL **EVERETT SUPER LABEL**

HOME OFFICE AND MILLS: EVERETT, WASHINGTON 244 California St., San Francisco-124 W. 4th St., Los Angeles

FROM THE FOLLOWING PAPER MERCHANTS:

SAN FRANCISCO Blake, Moffitt & Towne Zellerbach Paper Company

LOS ANGELES
Blake, Moffitt & Towne
General Paper Company
Sierra Paper Company
Zellerbach Paper Compa OAKLAND

ake, Moffitt & Towns aion Paper Company dlerbach Paper Comp RUREKA Humboldt Paper Company

SACRAMENTO Blake, Moffitt & Towne Zellerbach Paper Company STOCKTON

Blake, Moffitt & Towne Zellerbach Paper Compa FRESNO

Blake, Moffitt & Towne Zellerbach Paper Company SAN JOSE Blake, Moffitt & Towne Zellerbach Paper Company

SAN DIEGO
Blake, Moffitt & Towne
General Paper Company
Zellerbach Paper Company
LONG BEACH
General Paper Company
Sierra Paper Company
PHOENIX
Blake, Moffitt & Towne
Zellerbach Paper Compan
TUCSON
Blake, Moffitt & Towne

RENO Zellerbach Paper Company

PORTLAND Blake, Moffitt & Towne Zellerbach Paper Compan

SALEM Blake, Moffitt & Towne Blake, Moffit & Towne
EUGENE
Zellerbach Paper Company
SEATTLE
Blake, Moffitt & Towne
Zellerbach Paper Company
TACOMA
Standard Paper Company
Tacoma Paper and Stationery
Company

SPOKANE
B. G. Ewing Paper Company
John W. Graham & Company
Spokane Paper & Stationery
Company
Zellerbach Paper Company

YAKIMA Zellerbach Paper Company BOISE Blake, Moffitt & Towne Zellerbach Paper Company

DENYER
The Carter, Rice & Carpenter
Paper Company

SPOKANE
B. G. Ewing Paper Company
HONOLULU, T. H.
Honolulu Paper Ca, Lié.
Patten Company, Lié.

MANILA, P. I. J. P. Heilbronn Company SHANGHAI, CHINA Cosmos Paper

AUCKLAND, N.Z. SYDNEY, AUSTRALIA Costello & Co., Ltd. 1933, according to preliminary figures compiled from returns of the Biennial Census of Manufactures taken this year, released December 18th by Director William L. Austin, Bureau of the Census, Department of Commerce.

"The number of wage earners employed in pulp mills increased 17.7 per cent, from 20,074 in 1933 to 23,623 in 1935, and their wages, \$23,401,212, exceeded the 1933 figure by 29.3 per cent.

"The total production of pulp (wood

and other fiber) increased from 4,365,-668 tons, valued at \$132,471,475, in 1933 to 5,050,856 tons, valued at \$166,343,-506, in 1935, the rates of increase being 15.7 per cent for quantity and 25.6 per cent for value.

"The total consumption of wood in 1935 amounted to 7,628,274 cords, costing \$58,243,652, of which 5,061,611 cords, costing \$36,667,945, was contributed by yellow pine, domestic spruce, and hemlock.

"This industry, as classified for Manufactures Census purposes, embraces establishments engaged primarily in the production of pulp from wood and from other fiber. The greater part of the pulp produced is consumed by paper mills operated in conjunction with pulp mills.

"Statistics for 1935, with comparative figures for earlier years, are given in the following tables. All figures for 1935 are preliminary and subject to revision."

1033

TABLE 2.—PRODUCTS, BY KIND, QUANTITY, AND VALUE: 1935 AND 1933

	1	935	1	933
Pulp industry, all products, total	Tons (2,000 pounds)	Value (f.o.b. mill) \$167,208,261	Tons (2,000 pounds)	Value (f.o.b. mill) \$134,691,766
	5,050,856	166,343,506	4,365,668	
Pulp (wood and other fiber)		864,755	4,303,008	132,471,475 2,220,291
Wood pulp, total	4,944,226	151,002,535	4,276,204	124,072,465
Mechanical, total	1,355,819	24,972,104	1,197,553	23,612,012
Not steamed	1,205,199	22,224,975	1,079,066	21,269,727
Steamed	150,620	2,747,129	118,487	2,342,285
Sulphite, total	1,594,748	71,415,585	1,327,575	54,508,773
Unbleached	611,084	21,227,775	601,102	21,142,621
Bleached, total	983,664	50,187,810	726,473	33,366,152
Superpurified	81,623	5,838,409	(1)	(1)
Rayon and special chemical grades	126,470	7,170,113	(1)	(1)
Other bleached	775,571	37,179,288	(1)	(1)
Sulphate, total	1,467,749	36,008,886	1,259,351	29,095,663
Unbleached	1,340,288	31,213,254	1,195,938	26,618,287
Bleached	127,461	4,795,632	63,413	2,477,376
Soda, semichemical, and other	489,238	18,204,824	457,790	16,471,331
Screenings, total	36,672	401,136	33,935	384,686
Mechanical	3,902	22,146	4,243	45,499
Chemical	32,770	378,990	29,692	339,187
Other pulp ³	106,630	15,340,971	89,464	8,399,010

¹ Not reported separately.

Super)

ON eles

E CITY per Compan .U, T. H. er Co., Ltd. ny, Ltd.

P. I. n Company , CHINA Co.

VD, N.Z. vart, Ltd. JSTRALIA L, Ltd. ⁸Cotton pulp, cottonseed-hull-shavings pulp, rag pulp, reclaimed paper pulp, and straw pulp.

TABLE 3,--PULPWOOD CONSUMPTION--QUANTITY AND COST, BY KIND OF WOOD: 1935 AND 1933

1035

	723			922
Cords	Cost		Cords	Cost
7,628,274	\$58,243,652		6,581,674	\$48,507,790
1,755,112 625,462	17,906,240 7,835,799		1,495,061 576,000	15,794,350 6,927,426
1,785,228	8,527,145		1,560,414	6,864,202
1,521,271	10,234,560		1,112,556	6,764,330
333,773 54,283	2,661,247 604,664	}	353,438	3,494,228
298,812 54,313	2,597,798 583,266		261,466 41,465	2,018,343 446,593
224,538 174,075 152,054	1,779,425 880,728 1,280,443		178,974 154,847 93,032	1,223,037 620,510 846,715
9,587	69,638		21,844	147,479
29,299 317 675	191,893	}	252,436	1,606,622
292,792	1,223,079	,	480,141	1,753,955
	Cords 7,628,274 1,755,112 625,462 1,785,228 1,521,271 333,773 54,283 298,812 54,313 224,538 174,075 152,054 9,587 29,299 317,675	7,628,274 \$58,243,652 1,755,112 17,906,240 625,462 7,835,799 1,785,228 8,527,145 1,521,271 10,234,560 333,773 2,661,247 54,283 604,664 298,812 2,597,798 54,313 583,266 224,538 1,779,425 174,075 880,728 152,054 1,280,443 9,587 69,638 29,299 191,893 317,675 1,867,727	Cords 7,628,274 \$58,243,652 1,755,112 17,906,240 625,462 7,835,799 1,785,228 8,527,145 1,521,271 10,234,560 333,773 2,661,247 54,283 604,664 298,812 2,597,798 54,313 583,266 224,538 1,779,425 174,075 880,728 152,054 1,280,443 9,587 69,638 29,299 191,893 17,675 1,867,727	Cords Cost Cords 7,628,274 \$58,243,652 6,581,674 1,755,112 17,906,240 1,495,061 625,462 7,835,799 576,000 1,785,228 8,527,145 1,560,414 1,521,271 10,234,560 1,112,556 333,773 2,661,247 \$353,438 298,812 2,597,798 261,466 54,313 583,266 41,465 224,538 1,779,425 178,974 174,075 880,728 154,847 152,054 1,280,443 93,032 9,587 69,638 21,844 29,299 191,893 252,436 317,675 1,867,727 252,436

¹ Figures combined to avoid disclosing quantities consumed by individual establishments.

²Bleached and unbleached soda, semichemical, and "other." Combined to avoid disclosing approximations of production of individual establishments. Figures for 1933 include data for 346,738 tons of bleached soda pulp valued at \$14,733,566.

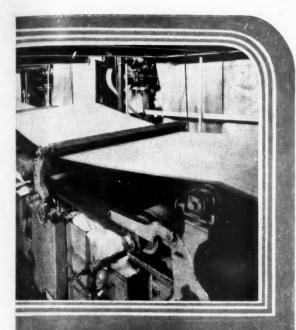
² Domestic chestnur, cottonwood, yellow popular, Douglas fir, willow, basswood, white pine, and miscellaneous hardwoods not reported separately, fee both years. In addition, imported beech, birch, and maple for 1933, and imported pine for 1933.

SULPHITE PULP



COOS BAY PULP CORPORATION

OREGON



FACTS ARE FACTS

Mills that have conducted comparative felting tests have declared Orr to be the winner. They have found that felts of this famous line will outlast other makes by as much as several days.

If you could visit our factories and see the care with which Orrs are made you would at once realize why these felts have superior weave, nap, porosity, resiliency, and resistence to wear.

The services of our representatives are at your command. Ask any one to specify that particular Orr felt which will best do your water removal job. Contact him directly or write the factory.

The Orr Felt & Blanket Co.

PIQUA, OHIO

Pacific Coast Representative: WALTER S. HODGES, Pacific Bldg., Portland, Ore.



Joint Meeting TAPPI-Superintendents Vancouver, B. C., June 11-12th

T the Hotel Vancouver in Vancouver, B. C., June 11th and 12th, The Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association, and the Pacific Section of the Technical Association of the Pulp & Paper Industry, will hold a joint convention.

Chairman Ray C. Onkels and Andreas Christensen have arranged an interesting and instructive meeting centered around the presentation of two papers and a round table discussion:

"Recent Trends In Pulp Bleaching," By Dr. John D. Rue, Hooker Electrochemical Company, Niagara Falls, New York.

"The Trend in Sulphite Pulping," by Andreas Christensen, British Columbia Pulp & Paper Company, Limited, Vancouver, B. C.

Round Table Discussion will be led by Carl Fahlstrom, Chairman, Pacific Section of TAPPI, and L. S. McCurdy, First Vice-Chairman of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association.

Friday

Registration will begin at 11 a.m. Friday, June 11th at the Hotel Vancouver. In the afternoon a golf tournament will be held at the Quilchena Golf Club. In the evening at 9 p.m. there will be an informal party at the hotel.

Saturday

Business sessions will begin Saturday morning, June 12th, at 9:30, at which time the papers will be presented. At noon a stag luncheon will offer an opportunity for the showing of a sound moving picture, "News in the Making," or "The Story of Micarta."

Saturday afternoon will be devoted to the Round Table Discussion.

At 7:30 Saturday evening the convention banquet will be held with R. Bell-Irving as toastmaster and the Honorable A. Wells Gray, Minister of Lands of the Province of British Columbia, as guest speaker.

A dancing party at the hotel will follow the banquet.

Reservations should be made with either Ray C. Onkels, Westminster Paper Company, Ltd., New Westminster, B. C., or with Andreas Christensen, British Columbia Pulp & Paper Company, Ltd., Vancouver, B. C., joint chairmen of the convention.

Everyone is Invited

"SHOW US SAMPLES OF THE PAPER BEFORE YOU PRINT"

Business men have become paperconscious. It is not unusual any more for them to choose the paper on which their printed messages will go out. And when they choose paper, it is with an eye to quality and price.

If, for instance, you size your paper with G-C Aluminum Sulphate, you can be certain that this stage of your paper's manufacture will lend quality to the finished product . . . will help to bring

your paper to the customer's notice.

General Chemical ALUMINUM SULPHATE is made in a number of screen sizes for your convenience and economy. It is constantly high in Al2O3. Its Ferric Iron content, a cause of objectionable discoloration, is low. It is free from dirt and other foreign matter that will cause specks. It will store without caking and dissolves readily. When you place your orders, specify G-C Aluminum Sulphate.

General Chemical quality also applies to-

Anhydrous Sodium Bisulphite Barium Carbonate Epsom Salt Glauber's Salt Salt Cake Hydrofluoric Acid Nitre Cake Zinc Chloride Lead Acetate Disodium Phosphate Mineral Acids Sodium Hyposulphite Sodium Silicate Sodium Sulphite Potassium Alum Sulphuric Acid Sulphur Ammonium Alum Sodium Fluoride Aluminum Sulphate, Iron Free Aqua Ammonia

And other Heavy Chemicals of Standard Purity

Further information on these and other General Chemical Company products will be sent upon request. Write to

GENERAL CHEMICAL COMPANY

Executive Offices: 40 RECTOR STREET, NEW YORK

Pacific Coast Offices:

343 Sansome Street, San Francisco • 1031 South Broadway, Los Angeles



ALUM
(Aluminum Sulphate)

WHEN... QUALITY COUNTS

CONSUMERS EVERYWHERE

ARE INSISTING

HIGH GRADE BLEACHED SULPHITE PULPS



MADE BY THREE
MODERN PACIFIC COAST MILLS

RAINIER PULP & PAPER CO. SHELTON, WASHINGTON

GRAYS HARBOR PULP & PAPER CO.
HOQUIAM, WASHINGTON

OLYMPIC FOREST PRODUCTS CO.
PORT ANGELES, WASHINGTON

Annual Tonnage Available in Excess of 125,000 Tons

A MESSAGE

To the Pulp and Paper Mill Executives on the Pacific Coast

The Pacific Coast Division of the American Pulp and Paper Mill Superintendents Association, Inc., has proven its worth to many men in the industry through the fine meetings held since its organization and by its large increase in membership.

KEEPING PACE

with the progress of the Pulp and Paper Industry throughout the United States and Canada, requires every one to be alert and ready to keep abreast with the demands for larger production and better products.

YOUR OPPORTUNITY

is within the reach of all Mill Executives, Superintendents and other key men, by attending any of the frequent divisional meetings held in various locations during the year. Attend them and learn for yourselves why you should become affiliated with this valuable and growing organization.

Further information and application blanks for membership may be obtained from the division officers, or write to our central office.

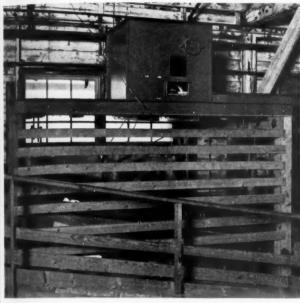
THE AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION, INC.

Affiliate Member American Paper and Pulp Association

54 North Main Street

MIAMISBURG, OHIO

MERRICK Weighs Shaffer Pulp



Shredded Pulp Weightometer The Shaffer Pulp Company, Inc., Tacoma, Washington

—adding another Pacific Northwest Mill to the rapidly growing list of Weightometer installations for....

CONTINUOUS, ACCURATE

weighing of Chips—Pulp—Hogged Fuel—Sulphur—Salt Cake.

Consult

MERRICK SCALE MFG. CO.

PASSAIC, NEW JERSEY

or

IRVING R. GARD & COMPANY

908 Lowman Building SEATTLE

Pacific Coast Supply Company

SAN FRANCISCO

PORTLAND

SEATTLE

Representing the Foremost Manufacturers

Calco Chemical Co., Inc.
California Cotton Mills Co.
Cameron Machine Co.
Eastwood-Nealley Corpn.
Farrell-Birmingham Co., Inc.
Heller & Merz.
F. C. Huyck & Sons



E. D. Jones & Sons Co.
Charles Mundt & Sons
Norton Company
J. J. Plank & Co.
F. W. Roberts Mfg. Co.
Texas Gulf Sulphur Co.
Union Screen Plate Co.

- CALL ON US FOR -

Apron Cloth
Beaters
Belting & Supplies
Brass and Copper
Specialists
Calenders
Canvas
Cylinder Moulds

Dandy Rolls
Dyes
Felts & Jackets
Gauges
Hand Winches
Jordans
Paints & Brushes
Paper Scales

Pulpstones
Pulpstone Burrs
Rewinders
Roll Grinders
Rolls
Rope (Cotton)
Screens
Screen Plates

Shower Pipes
Splicing Tissue
Steam Traps
Sulphur
Testing Instruments
Valves & Brass Fittings
Washer Cylinders
Wires and Wire Cloth

Keep Rolls Accurate--

LOBDELL ROLL GRINDERS •

The Lobdell is the only grinder with:

1. Automatic Crowning Device with single micrometer setting.

2. Closed Geared Head and Automatic Lubrication throughout.

3. Provision for Leveling Bed to compensate for foundation change and wear.

4. Rigid Wheel Mountings, with support under wheels for all roll diameters.

Now, with the addition of the V-Belt Wheel Drive, it has no equal for complete accuracy, efficiency and economy.

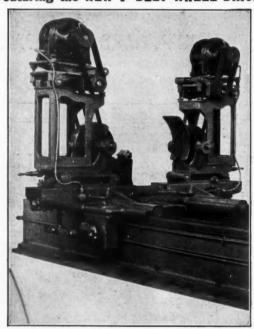
Investigate it thoroughly—it has a definite place in your speeded production set-up for 1937. Just a note will bring you details and prices. 3 NEW USERS-

Union Bag & Paper Co. Savannah, Ga.

> Crossett Lumber Co. Crossett, Ark.

St. Joe Paper Co. Port St. Joe, Fla.

Featuring the NEW V-BELT WHEEL DRIVE



This new V-Belt Wheel Drive has these important advantages: Gives greater rigidity to wheel-mounting—Eliminates belt-lift on hinged wheel-mounting while crowning device is in operation—Increases power—Eliminates vibration-producing belt-splices—No obstructions to placing any length roll directly upon journal stands from overhead crane or trolley.

Be sure to send for details. No obligation.

OTHER LOBDELL PRODUCTS

Improved Roll Caliper "Puraloy" Chilled Iron Calender Rolls
Complete Calender Stacks

LOBDELL

CAR WHEEL COMPANY
101 Years in Business
WILMINGTON DELAWARE

NATIONAL

Paper Dyes

TECHNICAL SERVICE

Competent Technicians Immediately
Available for Your
Color Problems.
May We Serve You?

NATIONAL ANILINE AND CHEMICAL COMPANY; INC.

40 RECTOR STREET

NEW YORK, N. Y.

BOSTON PROVIDENCE CHICAGO PHILADELPHIA

SAN FRANCISCO CHARLOTTE GREENSBORO ATLANTA CHATTANOGA PORTLAND, ORE. TORONTO

Branches and Distributors throughout the World



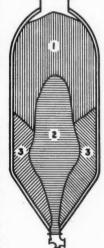
MAKE BETTER PULP AT LOWER COST

by employing forced circulation in the digester

NATURAL digester circulation from convection currents and gas ebulition cannot develop uniform temperature and pulp quality throughout. Zone 2 (see diagram) along the central axis becomes the hottest and Zone 3 along the lower cylindrical and the conical portions of the shell stays the coldest. Proper cooking in Zone 1 produces severe overcook-

ing in Zone 2 and undercooking in Zone 3; and variation of the zones in different cooks further impairs overall pulp quality. Only during the last two hours of the cook, after steam is shut off and pressure reduced, is any semblance of temperature uniformity attained.

These faults are entirely eliminated by our system of liquor circulation, which preheats the liquor externally, forces it through the digester, automatically unifies digester temperature and pressure at every point, and standardizes successive cooking cycles. The resulting better quality and larger quantity of pulp per cook are obtained in shorter time and



with a precison that the ordinary production method cannot approach. Less steam and chemicals are required and in addition the condensate with its valuable heat is returned to the boilers.

All this is accomplished with simple equipment, including principally a strainer, a pump, an indirect heater and necessary connecting pipe, with automatic control equipment if desired.

The low operating cost of the system and ability of all parts to resist corrosion are proven in successful installations which are available for inspection.

Write for cost and performance data.

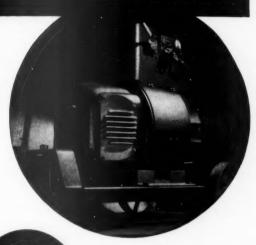
Chemical Construction Corporation



Consulting, Contracting and Erecting Chemical Engineers

30 Rockefeller Plaza NEW YORK

HOW THE G-E WELDER GIVES BETTER QUALITY Faster and Lower Cost Repair



Produces Superior Welds

Saves Time

Saves Expense The quality of your repair work on machine bases, frames, and other equipment parts can be improved with this new G-E single-operator, direct-current arc welder. It simplifies welding in any position, whether with bare or coated electrodes, because of adequate self-stabilization. This enables your operators to weld faster.

The simple duplex control provides easy adjustment of welding current and voltage. It can be operated by one hand to get exactly the characteristics required to do the best-quality welding.

The strong construction and careful manufacture of this welder permits maximum use with minimum outlay for repairs. Self-excitation results in greater reliability and reduced maintenance, and obviates the trouble-some separate exciter.

It will pay you to investigate G-E welding equipment—the most complete line on the market today. Consult the nearest G-E welding distributor or sales office. Or write General Electric, Schenectady, N. Y.

GENERAL % ELECTRIC



Pacific Building PORTLAND, OREGON

TELEPHONES Office—BEacon 9354 Residence—TRinity 1688

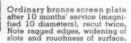
Something Exclusive.

but not expensive

De









Ordinary bronze screen plate after 3 months' service. Note rounding of slot edges, (indicated by darker areas) and scoring of surface.



Clean slots of maintained accuracy are indespensable to good paper. Smooth, slippery CRODON plate keeps slots clean, permits positive long-time control of slot size, maintains full capacity screening efficiency.



Chromium-plated screen plates provide-

at lower cost — operating advantages formerly unobtainable at any price.

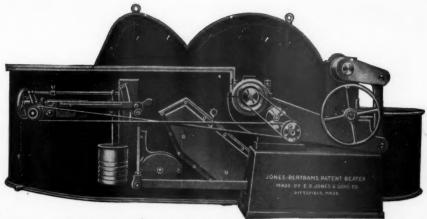
While giving these performance advantages. CRODON drops screening costs to new low levels.

We are prepared to prove these exceptional benefits in your own mill. Write for further

Chromium Corporation of America

recutive Offices-120 Broadway, New York

P. O. Box 1546 Waterbury, Conn. 3125 Perkins Ave. Cleveland, Ohio 4645 West Chicago Ave. Chicago, III.



JONES - BERTRAMS PATENT BEATER

Doubles tonnage output of equal size conventional beater. Decreases horsepower hours per ton, about 50 per cent. Rapid circulation; thorough mixing; no lodgments. Improved treatment; no pulp carried over roll.

Choice of automatic beater control, either Milne Automatic Mechanical Control, shown above, or Stamets Duckworth Electric Control.

Built and sold solely in United States by E. D. Jones & Sons Co., under exclusive licensee agreement with Bertrams Ltd., Sciennes, Edinburgh. U.S.A. patents; further U.S.A. patents pending.

Hydrating properties adjusted to meet any requirements. Results repeated, at low or high densities, by automatic control. Greater uniformity and improved quality of finished product. Requires less floor space than ordinary Hollanders.







MADE
on the
PACIFIC
COAST

--- Sold throughout the Country ANAGEMENT BOND— a Hammermill Product—is made at Grays Harbor Pulp and Paper Company, Hoquiam, Washington, and is distributed nationally by leading paper jobbers from coast to coast.

For sample book address one of the merchants named below.

Stocked and Sold on the Pacific Coast by

ZELLERBACH PAPER COMPANY

San Francisco, Calif. Los Angegles, Calif. Oakland, Calif. Fresno, Calif. San Dieo, Calif. San Jose, Calif. Sacramento, Calif. Stockton, Calif. Phoenix, Ariz. Eugene, Ore. Portland, Ore. Seattle, Wash. Spokane, Wash.

STANDARD PAPER CO.
San Francisco, Calif.: Oakland, Calif.

GENERAL PAPER CO. Tacoma, Wash.

HAMMERMILL PAPER COMPANY, Erie, Pa. SAN FRANCISCO OFFICE, 311 California St.

PACIFIC COAST **PRODUCTS**

for

Pacific Purchasers

Our Engineers and Technical Experts are at Your Service

PLANT RUBBER & ASBESTOS WORKS

San Francisco, Oakland, Los Angeles, Wilmington

FACTORIES San Francisco, Redwood City, Los Angeles

ASBESTOS SUPPLY COMPANY

Distributors and Applying Contractors

Portland Seattle Tacoma

SHULER & BENNINGHOFEN

HAMILTON, OHIO

Miami Woolen Mills, Established 1858



HAMILTON FELTS



Make Good Papers... at Lower Cost

SALES SLIPS, office forms, multicopy records, whether individual sheets or in con-"flatpack" arrangement, delivery tickets, bills of lading . . . the entire range of miscellaneous paper forms that constitute the working basis of business . . . must be inexpensive because they cannot be charged to the customer. But they must also have even texture, good finish and writing surface.

By removing excess water in the shortest time, running at high speeds without shut downs for adjustment and delivering an even textured, uniform web to the dryers for finishing, Hamilton Felts cut manufacturing costs and improve the quality of the finished product. Hamilton Felts are woven according to specifications applicable to every type of pulp and every grade of paper.

From finest tissue to heaviest board, there is a Hamilton Felt that does the job faster, better and cheaper.

Y

ALL PACIFIC COAST SULPHITE MILLS

Have installed and are now using

BUNKER HILL LEAD and LEAD ALLOY PRODUCTS

We have developed several Lead Alloys which are particularly
adaptable to sulphite acid plant work and will be glad to assist
you in making up specifications suitable to your requirements.

NORTHWEST LEAD COMPANY

2700 16th S. W.

BUNKER HILL

Seattle, Washington

SULPHUR

Freeport Sulphur Company

The Chanin Bldg., New York City 122 East 42nd Street

. . . Mines . . .

Freeport, Brazoria County, Texas Grande Ecaille, Plaquemines Parish,

Pacific Coast Sales Agents:

Balfour, Guthrie & Company

Seattle, Tacoma, Portland, San Francisco, Los Angeles and Vancouver, B. C.

SULPHUR

California Cotton Mills Co.

"IMPERI" COTTON DRYER FELTS

Made from Highest Grade Long Fibre Cotton

A Pacific Coast Product Insuring Prompt Delivery to Local Mills

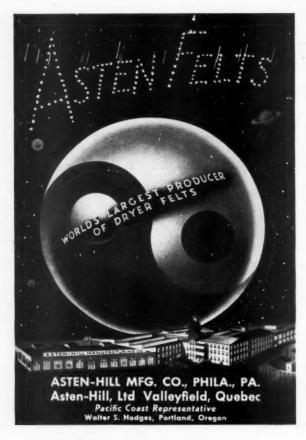
Distributed by

Pacific Coast Supply Co.

SAN FRANCISCO

PORTLAND

SEATTLE



NO SHUT DOWNS

due to jammed pumps

IN

WARREN-EQUIPPED PLANTS

Impellers are specially designed to give positive protection against clogging and binding. Vanes on the back of the impeller eliminate packing trouble by reducing stuffing box pressure. Inlets are extralarge, and all parts are correctly proportioned to stand up under the severe requirements of paper mill service.

When you specify a Warren pump for a stock handling job, you can be sure that the stock will move smoothly—efficiently. Get in touch with the Warren engineer in your territory. Warren has the pump you need

WARREN STEAM PUMP CO., Inc.
WARREN, MASSACHUSETTS

REDDY KILOWATT

Your Electrical Servant, Says:



"With the strength of a horse
And for a little cash
I'm Reddy to work—
I'll be there in a flash."

PUGET SOUND POWER & LIGHT COMPANY

"To Bes! Serve the Public Interest"

THE LARGEST

Unit Commercial Bank in the State of Washington

Ample capital to meet every normal requirement



Member of Federal Deposit Insurance Corporation



SIMONDS WORDEN WHITE CO. DAYTON. OHIO Factories at DAYTON - BUFFALO-CLEVELAND-BELOIT WWO Factories at DAYTON - BUFFALO-CLEVELAND-BELOIT

HELMERCO GREENS ★★ EXCELLENT ★★ For COVER PAPERS

Many paper manufacturers tell us of the remarkably fine results they have been obtaining by using Helmerco Greens in the making of cover papers. Helmerco Greens are extremely fast to light, have instant dispersion, and produce brilliant shades.

Ask today for samples.

Heller & Merz

DIVISION OF THE CALCO CHEMICAL CO., INC. 90 West Street, New York, N. Y.

A DIVISION OF AMERICAN CYANAMID COMPANY

BOSTON—35 Hartford St. • CHICAGO—146 W. Kinzie St. SPRINGFIELD, MASS.—40 Albert St. PHILADELPHIA—401 No. Broad St.



Factories: BOUND BROOK, N. J. and NEWARK, N. J.

Pacific Coast Sales Agents: PACIFIC COAST SUPPLY COMPANY

San Francisco • Portland • Seattle



Do you know the news of the industry on the Pacific Coast? To read PACIFIC PULP & PAPER INDUSTRY is to be informed. Every issue bristling with news. Subscribe now. U. S. and Canada, \$4.00 per year.

PACIFIC PULP & PAPER INDUSTRY

71 Columbia St., Seattle, Wn.



H. WATERBURY & SONS CO.

ORISKANY, N. Y.

Manufacturers of -

PAPER MAKERS'
FELTS

For All Grades of Pulp and Paper

Draper Brothers Company CANTON, MASS.



PAPERMAKERS' SULPHATE OF ALUMINA

STAUFFER CHEMICAL CO.

624-636 CALIFORNIA STREET SAN FRANCISCO, CALIF.

APPLETON

Make Good Paper

CHARLES M. SERVER
209 Terminal
Sales Bldg.
Portland, Oregon
Western Representative

Appleton Woolen Mills Appleton, Wisconsin

Rubber Covered Rolls

(Licensed by STOWE-WOODWARD, Inc.)

ACID-RESISTING RUBBER COVERING and Lining of PIPES - VALVES - PUMPS - FITTINGS

Huntington Rubber Mills, Inc.

35 W. Lander St. - Phone Main 2166 - Seattle, Washington

RY

RAY SMYTHE

MULTIVAT



FLAT SCREEN

ECCENTRIC DRIVE

PATENTED

ANALYZE-INVESTIGATE-INQUIRE of those using the SMYTHE MULTIVAT FLAT SCREEN

501 Park Building

Beacon 0502

Portland, Oregon, U.S.A.

WISCONSIN Perfect Surface

Fourdrinier Wires
Cylinder Wires

WISCONSIN WIRE WORKS, Appleton, Wisconsin

SKANEATELES FALLS. N. Y.

The Home of

The Waterbury Felt Co.

FELTS

Representative

W. A. KELLY 3125 N. E. Stanton St. Portland, Ore.



SPEED REDUCERS

(Link Belt, James, Foote, De Laval, Falk, etc.) All Sizes, Types—700 in Stock

REEVES DRIVES

No. 000 to No. 7 in Stock

Save 60% of New Costs

All Materials Overhauled, Guaranteed.

Patron Transmission Co.

158 Grand St.

C.

New York City

R. E. CHASE & CO.

Tacoma Building — TACOMA — MAin 4281 SEATTLE Branch, 1411 Fourth Ave. — ELiot 6663

AMERICAN AIR FILTERS SAUNDERS VALVES

ALLOY Castings, Pipe, Tube, Fittings, Valves, Pumps Sheet, Plate, Bars, Rod, Bolts, Screws

INSTRUMENTS—CONTROLLERS & REGULATORS
PROCESS EQUIPMENT—COMBUSTION EQUIPMENT—POWER PLANT SPECIALTIES



AIRPLANE Photographic SURVEYS

Are especially useful in preliminary work, showing Sites and Stands of Timber, Etc. Write us.

Photo Maps to Scale, Views

BRUBAKER AERIAL SURVEYS

Macleay Bldg., 4th and Washington Streets
ATwater 1903 — Portland, Oregon

The best test of the value of a Fourdrinier wire is on a Paper Machine. There can be no substitute for that experience.

Lindsay Fourdrinier Wires

successfully meet that test.

We furnish them in

LONGCRIMP and MODIFIED LONGCRIMP, DUO-WEAR and REGULAR WEAVE

The Lindsay Wire Weaving Co.
14025 Aspinwall Ave., Cleveland, O.

UNION SCREEN PLATE CO.

FITCHBURG, MASS., U. S. A.

UNION BRONZE SCREEN PLATES



Old Plates Reclosed and Re-cut to Accurate Gauge. Rolled Phosphor Bronze and Copper Plates for Rotary Screens.

Sole Manufacturers of the

Union - Witham Screen Plate Vat and Fastener

Pacific Coast Sales Agents: Pacific Coast Supply Co.

CARTHAGE MACHINE COMPANY

CARTHAGE, N. Y.

Manufacturers of

CHIPPERS CHIP SCREENS **SHREDDERS**

CHIP CRUSHERS

PULP GRINDERS WET MACHINES PAPER DUSTERS WOOD WASHERS

DIGESTER BLOW VALVES AND FITTINGS

Mill Architect and Engineer WISCONSIN RAPIDS, WIS.

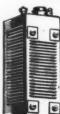
PULP and PAPER MILLS

Ground Wood, Sulphite, Sulphate, Surveys, Estimates and Reports - Water Power Development

Reference—A long list of successful plants in various parts of U. S. and Canada

Over 25 years actual experience in designing and building of mills.



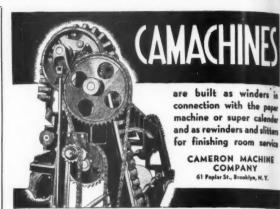


EDISON

NICKEL-IRON-ALKALINE STORAGE BATTERIES

Edison Storage Battery Supply Company

Main Office & Factory: West Orange, N. J. Seattle San Francisco



PULPWOOD CLEANING MACHINES * * BARKERS *

KNOT BORING and ROUTING MACHINES CONCAVE KNIFE AND BROUTING BIT GRINDERS

STETSON-ROSS MACHINE CO. SEATTLE, WASHINGTON

RECORD FOUNDRY & MACHINE CO.

Carried in Stock by Coast Representative: A. H. COX & CO, 1757 1st Ave. So., SEATTLE, WASH.

good wires are APPLETON WIRE WORKS INC., APPLETON. WIS.

CHEMIPULP PROCESS, INC.

CHEMICAL PULP MILL ENGINEERS

CHEMICAL PULPING PROCESSES OPERATING SURVEYS ESTIMATES

Woolworth Building, WATERTOWN, N. Y.

PACIFIC COAST OFFICE: 3311 First Ave., So., Seattle, Wash CANADIAN AGENCY: 403 Crescent Building, Montreal, P. Q.

NG-VENTILATING-DRYING

J. O. ROSS ENGINEERING COMPANY 350 Madison Avenue, New York, N. Y. 2860 N.W. Front Avenue, Portland, Ore.

E. G. DREW-Pacific Coast Representative



A PLUS in Lubrication?

Yes, it's Shell's "Invisible Element"...a combis tion of Shell's world-wide resources in laboratories and refineries; decades of experience and research by Shell's engineers and scientists. It is the aim to make lubrication more efficient, more economical for industry

INDUSTRIAL LUBRICANTS

Bagle Beloit Black-Bristo Bruba Bulkle

MA

Califo Camer Cartha Chase Chemi Chemi Chrom Comm Coos De Gu Draper Du Po

Merrick Nash E

Pacific Pacific Paper In Patron Pennsyl Plant R Puget S Puget S

Rainier Record Ross En Rice, Be

Schoenw Selden, Shartle Shell O Shibley Shuler i Simonds Smythe, Stauffer Strebbins Stetson-I Soundvisi

ES

IES

VASIL

NC.

RVEYS

115

INDEX OF ADVERTISERS

Albany Felt Co. American Brass Co. American Potash & Chemica' Co. American Pulp & Paper Mill Superintendents' Assn. Appleton Wire Works, Inc. Appleton Woolen Mills Astn-Hill Mfg. Co.	
Bagley & Sewall Co. Beloit Iron Works Black-Clawson Co. Bristol Co. Brubaker Aerial Surveys Bulkley Dunton Pulp Co., Inc.	13
California Cotton Mills Cameron Machine Co. Cardhage Machine Co. Chase & Co., R. E. Chemical Construction Corp. Chemipulp Process, Inc. Chromium Corp. of America Commercial Boiler Works Com Bay Pulp Corp.	13
Da Guere, L. A. Draper Bros. Co. Du Pont de Nemours & Co., E. I.	13 13 9
Eastwood-Nealley Corp. Edison Storage Battery Co. Electric Steel Foundry Co. Elwell-Parker Electric Co. Errettt Pulp & Paper Co.	13 9 8 11
Freguson & Co., Hardy S.	13
Gestal Chemical Co. General Dresstuff Corp. General Electric Co. Grays Harbor Pulp & Paper Co. Gest Western Electro-Chemical Co.	12 12 10
Hammermill Paper Co. Hardy, Geo. F. Huley Pulp & Paper Co. Heller & Merz Corp. Hodges, Walter S. Hooker Electrochemical Co. Huntington Rubber Mills, Inc. Huyck & Sons Co., F. G.	13
Improved Paper Machinery Co.	11
Jansen Drilling Co., N. C. Jenes & Sons Co., E. D.	
Lindsay Wire Weaving Co. Lobdell Car Wheel Co. Lockport Felt Co.	
Merrick Scale Mfg. Co.	12
Nah Engineering Co. National Aniline & Chemical Co. National Tank & Pipe Co. Nordiwest Lead Co.	12 12 12
Olympic Forest Products, Inc. Orr Felt & Blanket Co.	
Pacific Coast Supply Co. Pacific National Bank Paper Makers Chemical Co.	
Paper Makers Chemical Co. Patron Transmission Co.	130
Pennylvania Salt Mfg. Co. of Wash. Plant Rubber & Asbestos Works Plant Sound Power & Light Co. Paget Sound Pulp & Timber Co.	
Rinier Pulp & Paper Co. Rood Foundry & Machine Co. Rou Engineering Corp., J. O. Rica, Barton & Fales, Inc.	12
Schoenwerk, O. C. Selden, Stanley Sharde Bros. Machine Co.	
Shuler & Benninghofen	121
Sandre Chemical Co. Sunfer Chemical Co. Sunfer Chemical & Mfg. Co. Sunton Ross Machine Co. Sunton Hon Works Sunta Ilaktfabriken, A. B.	76 134 102
Taylor Instrument Co. Tess Gulf Sulphur Co.	90
Onen Screen Plate Co.	134
Wirm Steam Pump Co. Winthury & Sons Co., H. Wanthury Felt Co., The Water Grar Works	
Western Gear Works	133
Tom Gar Works Vondouse Electric & Mfg. Co. Vondouse With the Co.	104

STANLEY J. SELDEN INDUSTRIAL ENGINEER

INDUSTRIAL PLANTS
PULP AND PAPER MILLS

224 PERKINS BUILDING

PHONE MAIN 2365

TACOMA, WASHINGTON

O. C. SCHOENWERK

Consulting Engineer

2701 COLUMBUS BLVD. CORAL GABLES, FLORIDA

Pulp and Paper Mill Design – Construction

GEORGE F. HARDY

Consulting Engineer

305-309 Broadway, NEW YORK CITY, N. Y.

MEMBER

Am. Soc. C. E.

Am. Soc. M. E.

Eng. Inst. Can.

Consultation Reports Valuations Paper and Pulp Mills Hydro-Electric and Steam Power Plants Plans and Specifications

Hardy S. Ferguson & Co.

Consulting Engineers

200 Fifth Avenue, NEW YORK CITY

Hardy S. Ferguson......Member A.S.C.E., A.S.M.E., E.I.C., Moses H. Teaze.......Member A.S.M.E., E.I.C., A.S.C.E. J. Wallace Tower.....Member A.S.C.E., A.S.M.E.

Consultation, reports, valuations, and complete designs and engineering supervision for the construction and equipment of

Pulp and Paper Mills and other Industrial Plants. Steam and Hydro-electric Power Plants Dams and other Hydraulic Structures.

TABLE OF CONTENTS

IABLE OF	,	COMIEMI2
Review Articles	Page	Po
Review of the Pacific Coast Industry in 1936; Production,		Exports of Pulp, Paper and Paper Base Stocks, 1935.
Prices, Improvements, Expansion, Activities	17	Estimated U. S. Rayon Yarn Production for 1937
Historical—The Pacific Coast Industry 55 Years Ago	29	Census of Pulp and Paper Industry for 1935
Pulpwood Resources of the Pacific Coast; Tables and Map	31	Paper Board Operation, Production, Orders, 1936
New Forestry Legislation in Oregon and Washington	39	Paper Board Shipments, Stocks, Production, Consump.
Pulp Market in 1936—Foreign and Domestic Shares	40	tion and Stocks of Waste Paper, 1936
Pulp, Paper and Board Production in U. S. in 1936 News Print Production in 1936	46	Wood Pulp Production by Grades, 1899-1936
Pulp and Paper Imports in 1936	50	Wood Pulp Prices, 1928-1936 and by Months in 19361
Effect of Trade Agreement on American Paper Industry	62	Wood Pulp Imports by Grades, 1899-1921
U. S. Pulp Exports in 1936		Pulpwood Imports, 1930-1936
World Rayon Expansion to Require More Pulp	68	News Print Imports, 1933-1936
Employment Increasing in Pacific Coast Industry	71	Wood Pulp Imports by Grades and Countries of Origin,
Trends in the Foreign Pulp and Paper Industry in 1936	97	Wood Pulp Imports by Grades and Countries, 1932.
Census Report on U. S. Pulp and Paper Industry for 1935	115	1000
		Exports of News Print, 1933-1936
Statistical Tables		Sources of News Print Used in the U. S., 1913-1936
Pacific Coast Industry:		Imports of European News Print into the U. S., 1920.
		1936
U. S. Pacific Coast Wood Pulp Production, 1923-1935	17	Imports of News Print into the U. S. by Customs Dis-
British Columbia Wood Pulp Production, 1923-1936	17 18	tricts, 1936
Total Pacific Coast Wood Pulp Production, 1923-1936 Pacific Coast Pulpwood Consumption	18	Pulpwood Consumption, Quantity by States, 1931-1933 1
Pulp Tonnage Added to Pacific Coast Industry, 1936-	10	Wood Pulp Production by States, 1931-1933
1937	21	Production of Wood Pulp by Grades, 1933-1935
Review of British Columbia Pulp and Paper Production,		Consumption of Pulpwood, Quantity, Cost and Kind,
1919-1936	25	Value and Quanitity of Wood Pulp Production by
Paper Production of Pacific Coast States and British		States, 1933
Columbia, 1931-1936	25	
Paper and Board Tonnage Added to Pacific Coast In-		Other Statistical Tables:
dustry, 1936-1937	27	World Rayon Production in 1936.
Pulp and Paper Capacities of Pacific Coast Mills	48	Canadian Pulp Production, 1920-1936
Pacific Coast Wood Pulp Imports, 1936	58	Canadian Pulp Exports, 1918-1936
Pacific Coast Wood Pulp Imports, 1935	58 58	News Print Production in North America, 1923-1936 I
Pacific Coast Imports of Pulpwood, 1936.	58	News Print in Canada, 1913-1936
Pacific Coast Paper Imports, 1936 Pacific Coast Paper Imports, 1935	61	World Production of News Print, 1927-1936 1
Exports of Wood Pulp from Pacific Coast Ports, 1930-	0.	News Print Exports from Canada, 1933-19361
1936	65	
Exports of Paper and Board from Pacific Coast Ports,		C
		Graphs and Maps
1930-1936	65	
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930-		Pacific Coast Industry:
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930- 1936	66	Pacific Coast Industry: Wood Pulp Production, 1921-1936
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930- 1936 British Columbia Pulp and Paper Exports, 1928-1936		Pacific Coast Industry: Wood Pulp Production, 1921-1936
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930- 1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934-	66 66	Pacific Coast Industry: Wood Pulp Production, 1921-1936. Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930- 1936 British Columbia Pulp and Paper Exports, 1928-1936	66 66	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930- 1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934- 1935	66 66	Pacific Coast Industry: Wood Pulp Production, 1921-1936. Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930- 1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934- 1935 United States Industry:	66 66 109	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930- 1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934- 1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936	66 66	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources United States Industry:
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930- 1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934- 1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936	66 66 109 23	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources United States Industry: Wood Pulp Price Trends, 1926-1936
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936 Regional Percentage of United States Wood Pulp Production, 1936	66 66 109 23 23	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936 Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936	66 66 109 23 23 40	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations. Map of Pacific Coast Pulpwood Resources United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936. Wood Pulp, Production, Consumption, Imports, 1904-
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936. Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936. Total U. S. Production of Wood Pulp, 1935-1936	66 66 109 23 23	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936 Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936 U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Ship-	66 66 109 23 23 40 42	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936 Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936 Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks	66 66 109 23 23 40	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936 Production, Consumption, Imports and Exports of Sul-
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936 Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936 U. S. Paper Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936.	66 66 109 23 23 40 42 42 42	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations. Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936. Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936
1930-1936 Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936 Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936 U. S. Paper Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936.	66 66 109 23 23 40 42 42 42	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936 Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936 Proportion of U. S. News Print Consumption Produced
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936 Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936 Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936 U. S. Estimated Consumption of Wood Pulp, 1936 U. S. News Print Consumption, 1913-1936	66 66 109 23 23 40 42 42 42 42 47	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations. Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936 Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936 Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936 Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936 Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks. U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936 U. S. Estimated Consumption of Wood Pulp, 1936 U. S. News Print Consumption, 1913-1936 U. S. Pulp Imports, 1936	66 66 109 23 23 40 42 42 42 42	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations. Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936. Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1904-1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936. Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936. Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936. News Print Production, Imports and Consumption,
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936. Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936. Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks. U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936. U. S. Estimated Consumption, 1899-1936. U. S. News Print Consumption, 1913-1936. U. S. Pulp Imports, 1936. U. S. Wood Pulp Imports by Grade and Value, 1922-	66 66 109 23 23 40 42 42 42 42 47 51	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1904-1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936 Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936 Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936 News Print Production, Imports and Consumption, 1919-1936
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936 British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936 Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936 Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936 U. S. Estimated Consumption, 1899-1936 U. S. News Print Consumption, 1913-1936 U. S. News Print Consumption, 1913-1936 U. S. Wood Pulp Imports, 1936 U. S. Wood Pulp Imports by Grade and Value, 1922-1936	66 66 109 23 23 40 42 42 42 42 47	Pacific Coast Industry: Wood Pulp Production, 1921-1936. Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations. Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936. Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1904-1936. Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936. Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936. Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936. News Print Production, Imports and Consumption, 1919-1936. Percentages of Pulp Imports From Five Countries,
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936. Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936. Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks. U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936. U. S. Paper and Wood Pulp Production, 1936. U. S. Pulp Imports, 1936. U. S. Pulp Imports, 1936. U. S. Wood Pulp Imports by Grade and Value, 1922-1936. U. S. Imports of Bleached Sulphite by Countries, 1920-	66 66 109 23 23 40 42 42 42 42 47 51	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations. Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1904-1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936 Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936 Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936 News Print Production, Imports and Consumption, 1919-1936 Percentages of Pulp Imports From Five Countries, 1934-1936
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936. Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936. Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks. U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936. U. S. Estimated Consumption, 1913-1936. U. S. Pulp Imports, 1936. U. S. Wood Pulp Imports by Grade and Value, 1922-1936. U. S. Imports of Bleached Sulphite by Countries, 1920-1936.	66 66 109 23 23 40 42 42 42 42 47 51	Pacific Coast Industry: Wood Pulp Production, 1921-1936. Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations. Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936. Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1904-1936. Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936. Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936. Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936. News Print Production, Imports and Consumption, 1919-1936. Percentages of Pulp Imports From Five Countries,
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936. Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936. Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks. U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936. U. S. Estimated Consumption, 1899-1936. U. S. News Print Consumption, 1913-1936. U. S. Wood Pulp Imports, 1936. U. S. Wood Pulp Imports by Grade and Value, 1922-1936 U. S. Imports of Bleached Sulphite by Countries, 1920-1936 U. S. Imports of Unbleached Sulphite by Countries,	66 66 109 23 23 40 42 42 42 42 47 51 53	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936 Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936 Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936 News Print Production, Imports and Consumption, 1919-1936 Percentages of Pulp Imports From Five Countries, 1934-1936 Pulp Imports into U. S., 1904-1936
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936 Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936 Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936 U. S. Paper and Wood Pulp Production, Consumption S. Pulp Imports, 1936 U. S. Pulp Imports, 1936 U. S. Wood Pulp Imports by Grade and Value, 1922-1936. U. S. Imports of Bleached Sulphite by Countries, 1920-1936. U. S. Imports of Unbleached Sulphite by Countries, 1920-1936.	66 66 109 23 23 40 42 42 42 42 47 51	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations. Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1904-1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936. Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936 Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936 News Print Production, Imports and Consumption, 1919-1936 Percentages of Pulp Imports From Five Countries, 1934-1936 Pulp Imports into U. S., 1904-1936 Imports of Bleached Sulphite by Countries, 1920-1936 Imports of Bleached Sulphite by Countries, 1920-1936
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936. Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936. Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks. U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936. U. S. Estimated Consumption, 1899-1936. U. S. News Print Consumption, 1913-1936. U. S. Wood Pulp Imports, 1936. U. S. Wood Pulp Imports by Grade and Value, 1922-1936 U. S. Imports of Bleached Sulphite by Countries, 1920-1936 U. S. Imports of Unbleached Sulphite by Countries,	66 66 109 23 23 40 42 42 42 42 47 51 53	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1904-1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936 Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936 Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936 News Print Production, Imports and Consumption, 1919-1936 Percentages of Pulp Imports From Five Countries, 1934-1936 Imports of Bleached Sulphite, by Countries, 1920-1936 Imports of Unbleached Sulphate by Countries, 1921-1936 Imports of Unbleached Sulphate by Countries, 1921-1936 Imports of Unbleached Sulphate by Countries, 1920-1936
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936. Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936. Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks. U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936. U. S. Estimated Consumption, 1913-1936. U. S. News Print Consumption, 1913-1936. U. S. Wood Pulp Imports, 1936. U. S. Wood Pulp Imports by Grade and Value, 1922-1936 U. S. Imports of Bleached Sulphite by Countries, 1920-1936 U. S. Imports of Unbleached Sulphite by Countries, 1920-1936 U. S. Imports of Bleached Sulphate by Countries, 1930-	66 66 109 23 23 40 42 42 42 42 47 51 53 54	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations. Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1904-1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936. Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936 Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936 News Print Production, Imports and Consumption, 1919-1936 Percentages of Pulp Imports From Five Countries, 1934-1936 Pulp Imports into U. S., 1904-1936 Imports of Bleached Sulphite by Countries, 1920-1936 Imports of Bleached Sulphite by Countries, 1920-1936
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936. Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936. Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks. U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936. U. S. Estimated Consumption of Wood Pulp, 1936. U. S. News Print Consumption, 1913-1936. U. S. Pulp Imports, 1936. U. S. Wood Pulp Imports by Grade and Value, 1922-1936 U. S. Imports of Bleached Sulphite by Countries, 1920-1936 U. S. Imports of Bleached Sulphate by Countries, 1930-1936. U. S. Imports of Bleached Sulphate by Countries, 1920-1936 U. S. Imports of Bleached Sulphate by Countries, 1920-1936	66 66 109 23 23 40 42 42 42 42 47 51 53 54	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1904-1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936 Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936 Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936 News Print Production, Imports and Consumption, 1919-1936 Percentages of Pulp Imports From Five Countries, 1934-1936 Imports of Bleached Sulphite, by Countries, 1920-1936 Imports of Unbleached Sulphate by Countries, 1921-1936
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936. Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936. Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936. U. S. Estimated Consumption, 1899-1936. U. S. News Print Consumption, 1913-1936 U. S. Wood Pulp Imports by Grade and Value, 1922-1936 U. S. Wood Pulp Imports by Grade and Value, 1922-1936 U. S. Imports of Bleached Sulphite by Countries, 1920-1936 U. S. Imports of Unbleached Sulphate by Countries, 1920-1936 U. S. Imports of Bleached Sulphate by Countries, 1920-1936 U. S. Imports of Bleached Sulphate by Countries, 1920-1936 U. S. Imports of Bleached Sulphate by Countries, 1920-1936 U. S. Imports of Bleached Sulphate by Countries, 1920-1936 U. S. Imports of Bleached Sulphate Base Stocks, U. S. Imports of Pulp, Paper and Paper Base Stocks,	66 66 109 23 23 40 42 42 42 47 51 53 54 54 57	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations. Map of Pacific Coast Pulpwood Resources. United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1904-1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936 Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936 Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936 News Print Production, Imports and Consumption, 1919-1936 Percentages of Pulp Imports From Five Countries, 1934-1936 Pulp Imports into U. S., 1904-1936 Imports of Bleached Sulphite, by Countries, 1920-1936 Imports of Unbleached Sulphate by Countries, 1921-1936 Imports of Unbleached Sulphate by Countries, 1921-1936 Imports of Unbleached Sulphate by Countries, 1920-1936
Exports of Paper Board from Pacific Coast Ports, 1930-1936 British Columbia Pulp and Paper Exports, 1928-1936. British Columbia Principal Production Statistics, 1934-1935 United States Industry: U. S. Wood Pulp Production By Regions, 1936. Regional Percentage of United States Wood Pulp Production, 1936 U. S. Paper Production in 1936. Total U. S. Production of Wood Pulp, 1935-1936 Summary for 1936, U. S. Wood Pulp Production, Shipments and Stocks. U. S. Paper and Wood Pulp Production, Consumption and Pulpwood Consumption, 1899-1936. U. S. Estimated Consumption of Wood Pulp, 1936. U. S. News Print Consumption, 1913-1936. U. S. Pulp Imports, 1936. U. S. Wood Pulp Imports by Grade and Value, 1922-1936 U. S. Imports of Bleached Sulphite by Countries, 1920-1936 U. S. Imports of Bleached Sulphate by Countries, 1930-1936. U. S. Imports of Bleached Sulphate by Countries, 1920-1936 U. S. Imports of Bleached Sulphate by Countries, 1920-1936	66 66 109 23 23 40 42 42 42 42 47 51 53 54 54	Pacific Coast Industry: Wood Pulp Production, 1921-1936 Comparative Growth of Pacific Coast Pulp and Paper Industry, 1923-1936 Map of Pacific Coast Mill Locations Map of Pacific Coast Pulpwood Resources United States Industry: Wood Pulp Price Trends, 1926-1936 Pulpwood Prices, 1929-1936 Wood Pulp, Production, Consumption, Imports, 1904-1936 Total Wood Pulp Production, Consumption, Imports, Exports and Total Paper Production, 1900-1936 Production, Consumption, Imports and Exports of Sulphite, Sulphate and Groundwood, 1922-1936 Proportion of U. S. News Print Consumption Produced in U. S. and Canada, 1915-1936 News Print Production, Imports and Consumption, 1919-1936 Percentages of Pulp Imports From Five Countries, 1934-1936 Imports of Bleached Sulphite, by Countries, 1920-1936 Imports of Unbleached Sulphate by Countries, 1921-1936

The Cover Photograph » » The picture on the cover of the REVIEW NUMBER was taken by Gabriel Moulis for the SCHMIDT LITHOGRAPH COMPANY of San Francisco, and shows one of their paper coating machines which are kept in constant operation » » In this picture the freshly coated raw stock is about to start on its mile trip along the drying line » » As the coated paper leaves the color fountain it passes beneath a series of jogging and stationary brushs assuring an even coating on the continuous roll of stock » » Hot, washed air is forced through the drying line, slowly at completely absorbing all the moisture from the coating. To complete the operation the paper is then run between he steel rollers and is calendared, giving a smooth lustrous finish » » High grade coated paper on which the surface not only smooth and white, but also in which the chemical constituents are uniform, is essential to high grade lithograph work for lithograph printing is a chemical process » » Last year the Schmidt Lithograph Company produced appromately 6,000,000 pounds of coated paper.